

DSC-H5

SERVICE MANUAL

LEVEL 2

Ver. 1.1 2006.06

Revision History

How to use
Acrobat Reader

Internal memory
ON BOARD



US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
Chinese Model
Brazilian Model
Hong Kong Model
Korea Model
Tourist Model
Japanese Model

Link

SPECIFICATIONS	BLOCK DIAGRAMS	PRINTED WIRING BOARDS
SERVICE NOTE	FRAME SCHEMATIC DIAGRAM	REPAIR PARTS LIST
DISASSEMBLY	SCHEMATIC DIAGRAMS	

• [Precaution on Replacing the SY-150 board](#)

Note :

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

Note :

Les composants identifiés par une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

DIGITAL STILL CAMERA

SONY®



SPECIFICATIONS

Camera

[System]

Image device	7.20 mm (1/2.5 type) color CCD, Primary color filter
Total pixel number of camera	Approx. 7 410 000 pixels
Effective pixel number of camera	Approx. 7 201 000 pixels
Lens	Carl Zeiss Vario-Tessar 12× zoom lens f = 6.0 – 72.0 mm (36 – 432 mm when converted to a 35 mm still camera) F2.8 – 3.7
Exposure control	Automatic exposure, Shutter speed priority, Aperture priority, Manual exposure, Scene Selection (7 modes)
White balance	Automatic, Daylight, Cloudy, Fluorescent, Incandescent, Flash, One push
File format (DCF compliant)	Still images: Exif Ver. 2.21 JPEG compliant, DPOF compatible Movies: MPEG1 compliant (Monaural)
Recording media	Internal Memory (30 MB) “Memory Stick Duo”
Flash	Flash range (ISO set to Auto): approx. 0.3 m to 9.0 m (11 7/8 inches to 29 feet 6 3/8 inches) (W)/approx. 0.9 m to 6.8 m (35 1/2 inches to 22 feet 3 3/4 inches) (T)
Viewfinder	Electric viewfinder (color)

[Input and Output connectors]

A/V OUT jack (Monaural)	Minijack Video: 1 Vp-p, 75 Ω , unbalanced, sync negative Audio: 327 mV (at a 47 k Ω load) Output impedance 2.2 k Ω
-------------------------	--

USB jack	mini-B
----------	--------

USB communication	Hi-Speed USB (USB 2.0 compliant)
-------------------	----------------------------------

[LCD screen]

LCD panel	7.5 cm (3.0 type) TFT drive
Total number of dots	230 400 (960×240) dots

[Finder]

Panel	0.5 cm (0.2 type) color
-------	-------------------------

Total number of dots	Approx. 200 000 dots equivalent
----------------------	---------------------------------

[Power, general]

Power	HR 15/51:HR6 (size AA) Nickel-Metal Hydride batteries (2), 2.4 V LR6 (size AA) alkaline batteries (2), 3 V ZR6 (size AA) Oxy Nickel Primary Battery (2), 3 V AC-LS5K AC Adaptor 4.2 V
-------	---

Power consumption (during shooting with the LCD screen)	1.4 W
---	-------

Operating temperature	0 to 40°C (32 to 104°F)
-----------------------	-------------------------

Storage temperature	–20 to +60°C (–4 to +140°F)
---------------------	-----------------------------

Dimensions	113.2×83.0×94.0 mm (4 1/2 inches × 3 3/8 inches × 3 3/4 inches) (W/H/D, excluding protrusions)
------------	---

Mass	Approx. 554 g (1 lb 3.5 oz) (including two batteries, shoulder strap, adaptor ring, lens hood, lens cap, etc.)
------	--

Microphone	Electret condenser microphone
------------	-------------------------------

Speaker	Dynamic speaker
---------	-----------------

Exif Print	Compatible
------------	------------

PRINT Image Matching III	Compatible
--------------------------	------------

PictBridge	Compatible
------------	------------

BC-CS2A/CS2B Ni-MH battery charger

Power requirements	AC 100 to 240 V, 50/60 Hz, 3 W
--------------------	--------------------------------

Output voltage	AA: DC 1.4 V 400 mA × 2 AAA: DC 1.4 V 160 mA × 2
----------------	---

Operating temperature	0 to +40°C (+32 to +104°F)
-----------------------	----------------------------

Storage temperature	–20 to +60°C (–4 to +140°F)
---------------------	-----------------------------

Dimensions	Approx. 713091 mm (2 7/8×1 3/16×3 5/8 inches) (W/H/D)
------------	--

Mass	Approx. 90 g (3 oz)
------	---------------------

Design and specifications are subject to change without notice.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
 - Keep the temperature of the soldering iron around 270°C during repairing.
 - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
 - Be careful not to apply force on the conductor when soldering or unsoldering.

Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.

(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)





: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
Soldering irons using a temperature regulator should be set to about 350°C.
Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

CAUTION :

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!


LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

TABLE OF CONTENTS

1. SERVICE NOTE

- 1-1. DESCRIPTION ON SELF-DIAGNOSIS DISPLAY 1-1
- 1-2. METHOD FOR COPYING OR ERASING THE DATA IN
INTERNAL MEMORY 1-2
- 1-3. PRECAUTION ON REPLACING THE SY-150
BOARD 1-3
- 1-4. VIDEO OUT DEFAULT DATA CHECK 1-3
- 1-5. INITIAL LANGUAGE DATA CHECK 1-3

2. DISASSEMBLY

- 2-1. DISASSEMBLY 2-3

3. BLOCK DIAGRAMS

- 3-1. OVERALL BLOCK DIAGRAM (1/2) 3-1
- 3-2. OVERALL BLOCK DIAGRAM (2/2) 3-2
- 3-3. POWER BLOCK DIAGRAM (1/2) 3-3
- 3-4. POWER BLOCK DIAGRAM (2/2) 3-4

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

- 4-1. FRAME SCHEMATIC DIAGRAM 4-1
- 4-2. SCHEMATIC DIAGRAMS 4-5
- 4-3. PRINTED WIRING BOARDS 4-25
- 4-4. MOUNTED PARTS LOCATION 4-32

5. REPAIR PARTS LIST

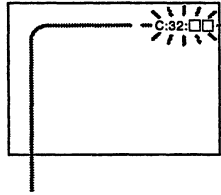
- 5-1. EXPLODED VIEWS 5-3
- 5-2. ELECTRICAL PARTS LIST 5-10

1. SERVICE NOTE

1-1. DESCRIPTION ON SELF-DIAGNOSIS DISPLAY

Self-diagnosis display

The camera has a self-diagnosis display. This function displays the camera condition with five-digits (a combination of a letter and figures) on the LCD screen. If this occurs check the following code chart. The five-digits display informs you of the camera's current condition. The last two digits (indicated by □□) will differ depending on the state of the camera.



Self-diagnosis display

- C: □□: □□

The contents which can be handled by customer, are displayed.

- E: □□: □□

The contents which can be handled by engineer, are displayed.

Display Code	Countermeasure	Cause	Caution Display During Error
C:32:□□	Turn the power off and on again.	Trouble with hardware.	SYSTEM ERROR
C:13:□□	Format the "Memory Stick" or internal memory.	"Memory Stick" or internal memory is unformatted.	FORMAT ERROR
	Insert a new "Memory Stick".	"Memory Stick" is broken.	MEMORY STICK ERROR
	Turn the power off and on again.	Trouble with internal mamory.	INTERNAL MEMORY ERROR
E:61:□□	Checking of lens drive circuit.	When failed in the focus zoom initialization.	—
E:62:□□	Inspect angular velocity sensor peripheral circuits.	Steady shot function does not work well.	
E:91:□□	Checking of flash unit or replacement of flash unit. (Note)	Abnormality when flash is being charged.	
E:92:□□	Insert a batteries correctly.	Batteries are pack is not inserted correctly.	

Note : After repair, be sure to execute the "Initialize" of the setup screen.

1-2. METHOD FOR COPYING OR ERASING THE DATA IN INTERNAL MEMORY

The data can be copied/erased by the operations on the Setup screen. (When erasing the data, execute formatting the internal memory.)

Note: 1 When replacing the SY-150 board, erase the data in internal memory of the board before replacement.

Note: 2 When replacing the SY-150 board or the IC202 on the SY-150 board, execute formatting and initialize the internal memory after replacement.

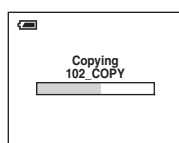
Method for copying the data in internal memory



Copy

Copies all images in the internal memory to a "Memory Stick Duo".

	OK	See the following procedure.
✓	Cancel	Cancels the copying.

- ① Insert a "Memory Stick Duo" having 32 MB or larger capacity.
- ② Select [OK] with ▲ on the control button, then press ●.
The message "All data in internal memory will be copied Ready?" appears.
- ③ Select [OK] with ▲, then press ●.
Copying starts.



- Use a fully charged Nickel-Metal Hydride battery or the AC Adaptor (not supplied). If you attempt to copy image files using a batteries with little remaining charge, the batteries may run out, causing copying to fail or possibly corrupting the data.
- You cannot copy individual images.
- The original images in the internal memory are retained even after copying. To delete the contents of the internal memory, remove the "Memory Stick Duo" after copying, then execute the [Format] command in  (Internal Memory Tool).
- You cannot select a folder copied on a "Memory Stick Duo".
- Even if you copy data, a  (Print order) mark is not copied.

Method for formatting the internal memory

This item does not appear when a "Memory Stick Duo" is inserted in the camera.
The default settings are marked with ✓.

Format

Formats the internal memory.

- Note that formatting irrevocably erases all data in the internal memory, including even protected images.

	OK	See the following procedure.
✓	Cancel	Cancels the formatting.

- ① Select [OK] with ▲ on the control button, then press ●.
The message "All data in internal memory will be erased Ready?" appears.
- ② Select [OK] with ▲, then press ●.
The format is complete.

• PROCESS AFTER FIXING FLASH ERROR

When "FLASH error" (Self-diagnosis Code E : 91 : **) occurs, to prevent any abnormal situation caused by high voltage, setting of the flash is changed automatically to disabling charge and flash setting.

After fixing, this setting needs to be deactivated. Flash error code can be initialized by the operations on the Setup screen.

Method for Initializing the Flash Error Code

Initialize

Initializes the setting to the default setting.

	OK	See the following procedure.
✓	Cancel	Cancels the resetting.

- ① Select [OK] with ▲ on the control button, then press ●.
The message "Initialize all settings Ready?" appears.
- ② Select [OK] with ▲, then press ●.
The settings are reset to the default setting.
Make sure that the power is not disconnected during resetting.

1-3. PRECAUTION ON REPLACING THE SY-150 BOARD

- The Repair Board has already been adjusted. Re-initialization or EVR data copy from the set before repair is not required.
- Perform “VIDEO OUT Default Data Check” and “Initial Language Data Check” mentioned below, and also the adjustment items necessary after SY Board replacement.

1-4. VIDEO OUT DEFAULT DATA CHECK

When you replace to the repairing board, the written data of repairing board also might be changed to original setting because of broadcast system (NTSC/PAL).

When the data has changed because of board replacing etc., check the default data of VIDEO OUT if destination code is right. If not, rewrite to the right value.

VIDEO OUT Default Data

Page	Address	Data	
		NTSC	PAL
4F	8D	00	01

Writing Method:

- 1) Select page: 00, address: 01, and set data: 01.
- 2) Select page: 4F, address: 8D, and set data: 00 (NTSC) or data: 01 (PAL).
- 3) Select page: 40, address: 38, and set data: 00.
- 4) Click **[Save]** on the SEUS screen.
- 5) Select page: 80, address: 34, and check that the data is “00”.
- 6) Select page: 80, address: 30, and check that the data is “00”.
- 7) Select page: 00, address: 01, and set data: 00.

1-5. INITIAL LANGUAGE DATA CHECK

If the SY-150 board was replaced, initial language setting may be changed. Accordingly, change the following data so as to set same initial language as that of the set distributing in each region.

Initial language: Language displayed at the next starting if the setting of Setup menu was reset.

It is different from the language setting selectable with the menu.

Initial Language Data

Page	Address	Data	Language	GP1	GP2	GP3	GP4
4F	8C	00	English		●	●	●
		01	Japanese	●			
		04	Spanish			●	●
		06	Portugal				●
		08	Simplified Chinese				●
		0B	Russian			●	
		0D	Korean				●

Note: GP1 is fixed to Japanese.

GP2 is fixed to English.

GP3 is either English, Spanish, or Russian.

GP4 is either English, Spanish, Portugal, Simplified Chinese, or Korean.

Writing Method:

- 1) Select page: 00, address: 01 and set data: 01.
- 2) Select page: 4F, address: 8C, and set the Initial Language Data.
- 3) Select page: 40, address: 38, and set data: 00.
- 4) Click **[Save]** on the SEUS screen.
- 5) Select page: 80, address: 34, and check that the data is “00”.
- 6) Select page: 80, address: 30, and check that the data is “00”.
- 7) Select page: 00, address: 01, and set data: 00.
- 8) Turn off the camera.
- 9) Turn on the camera. Execute “Initialize” of Setup screen.
- 10) Check the language displayed when the camera starts.

2. DISASSEMBLY

Link

• **DISASSEMBLY**

• **HELP**

• **COMMON NOTE FOR DISASSEMBLY**

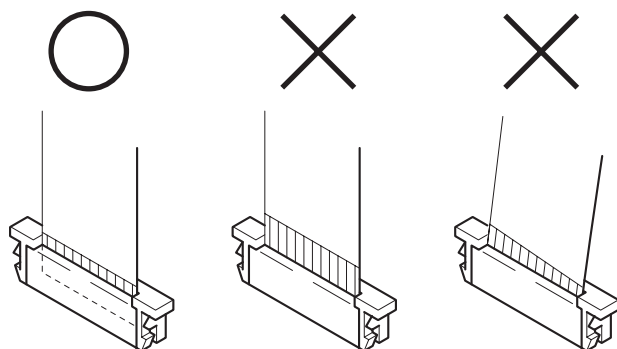
2. DISASSEMBLY

2. DISASSEMBLY

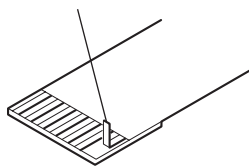
NOTE FOR REPAIR

Make sure that the flat cable and flexible board are not cracked or bent at the terminal.

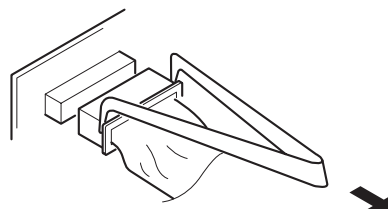
Do not insert the cable insufficiently nor crookedly.



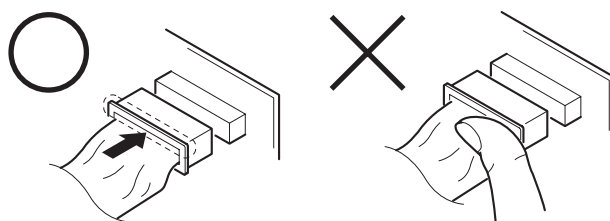
Cut and remove the part of gilt which comes off at the point.
(Take care that there are some pieces of gilt left inside)



When remove a connector, don't pull at wire of connector.
Be in danger of the snapping of a wire.



When installing a connector, don't press down at wire of connector.
Be in danger of the snapping of a wire.



DISCHARGING OF THE FLASHLIGHT POWER SUPPLY CAPACITOR

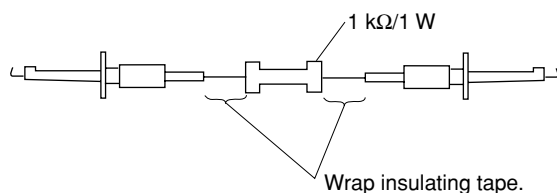
The charging elect capacitor 320uF (330V) is charged up to the maximum 300 V potential.

There is a danger of electric shock by this high voltage when the capacitor is handled by hand. The electric shock is caused by the charged voltage which is kept without discharging when the main power of the DSC-H5 is simply turned off. Therefore, the remaining voltage must be discharged as described below.

Preparing the Short Jig

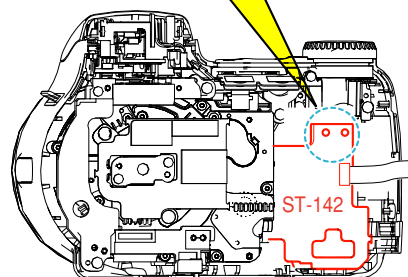
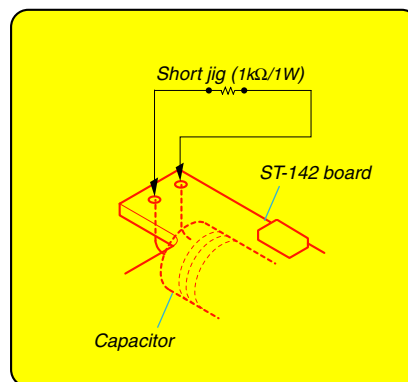
To preparing the short jig, a small clip is attached to each end of a resistor of 1 kW /1 W (1-215-869-11)

Wrap insulating tape fully around the leads of the resistor to prevent electrical shock.



Discharging the Capacitor

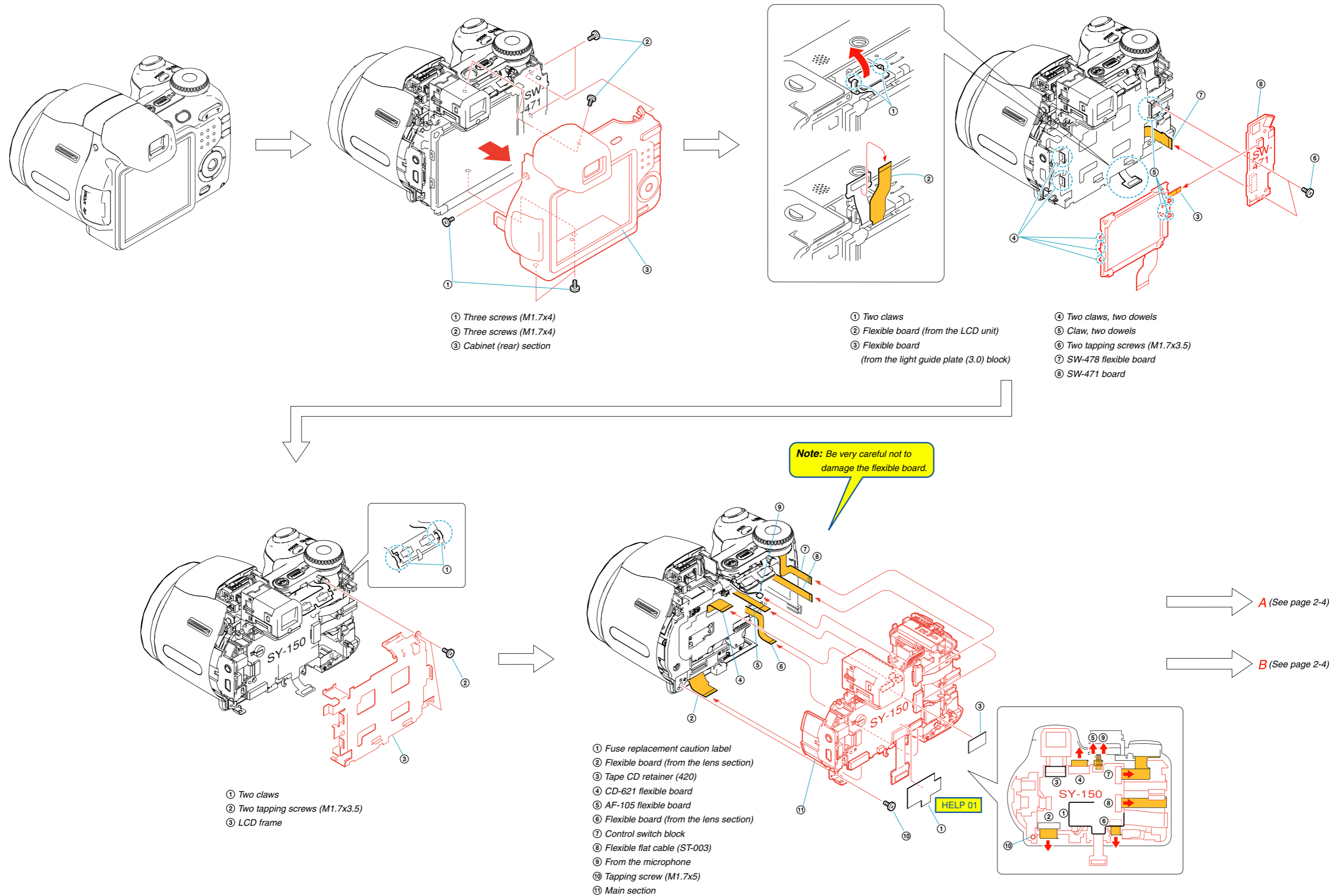
Short circuits between the positive and the negative terminals of charged capacitor with the short jig about 10 seconds.



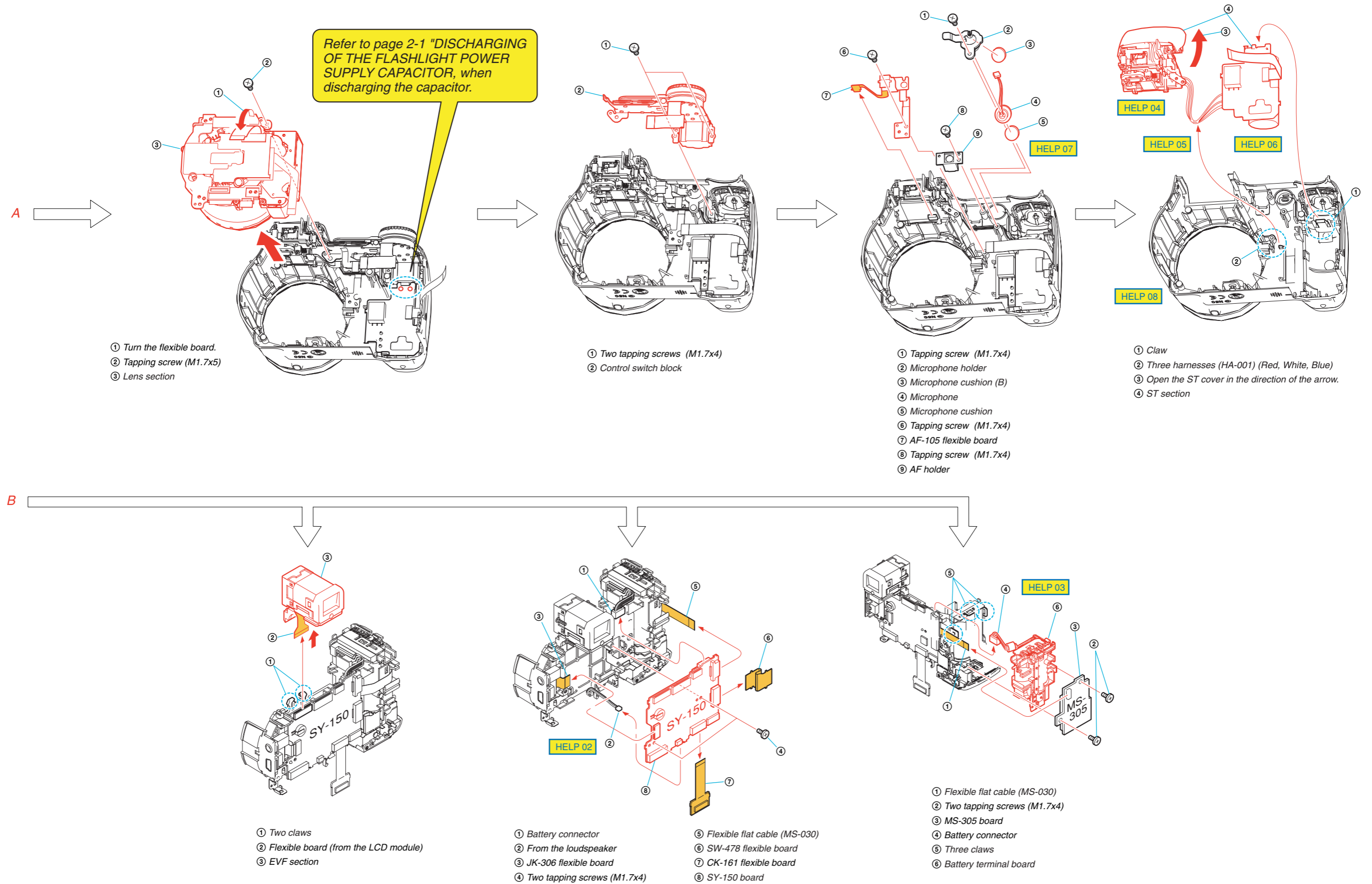
2. DISASSEMBLY

The following flow chart shows the disassembly procedure.

2-1. DISASSEMBLY



2. DISASSEMBLY

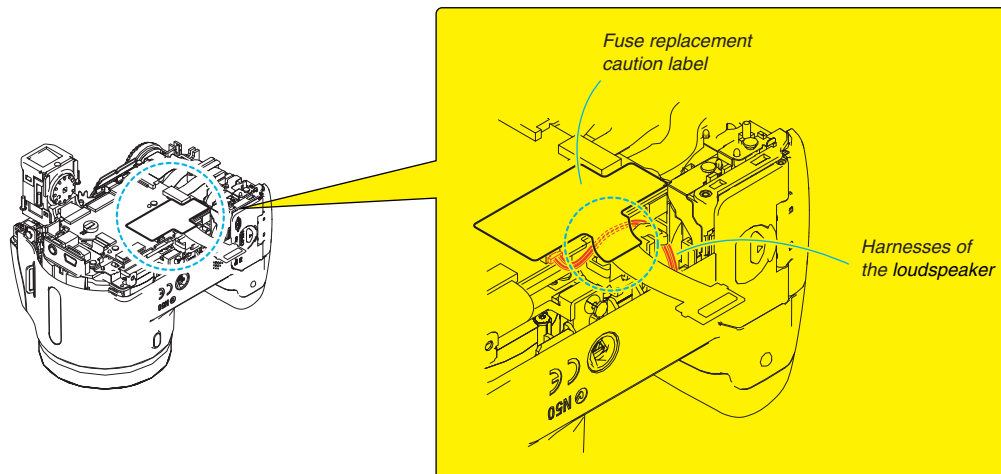


HELP

Disassembling and assembling procedures that require attention are described here.

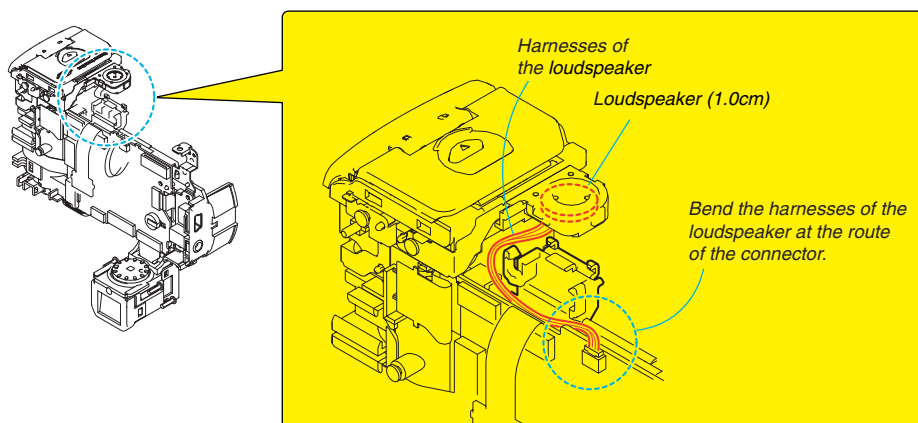
HELP 01

When attaching the fuse replacement caution label to the SY-150 board, cover the harness of the loudspeaker with the fuse replacement caution label.



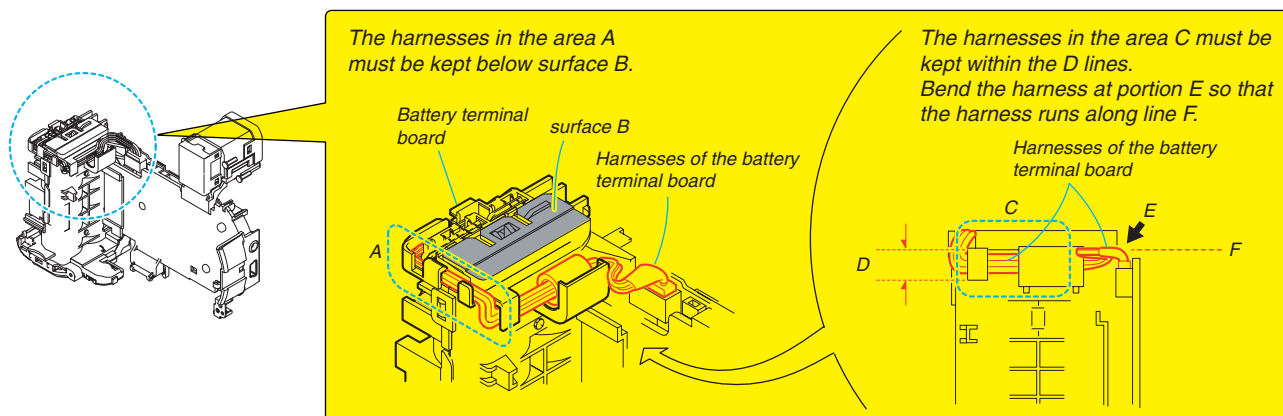
HELP 02

When installing the loudspeaker, route the harnesses of the loudspeaker as shown in the figure.



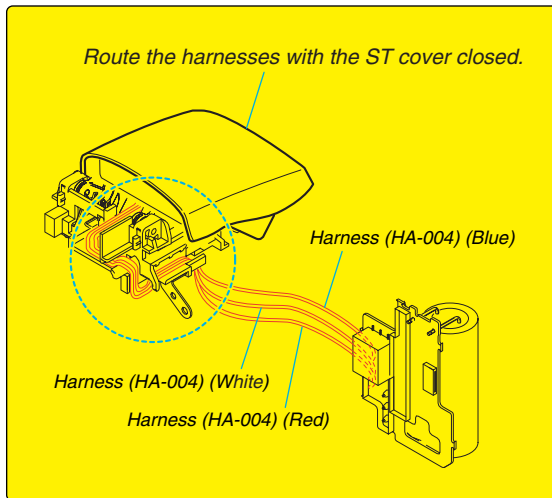
HELP 03

When installing the battery terminal board, route the harnesses of the battery terminal board as shown in the figure.



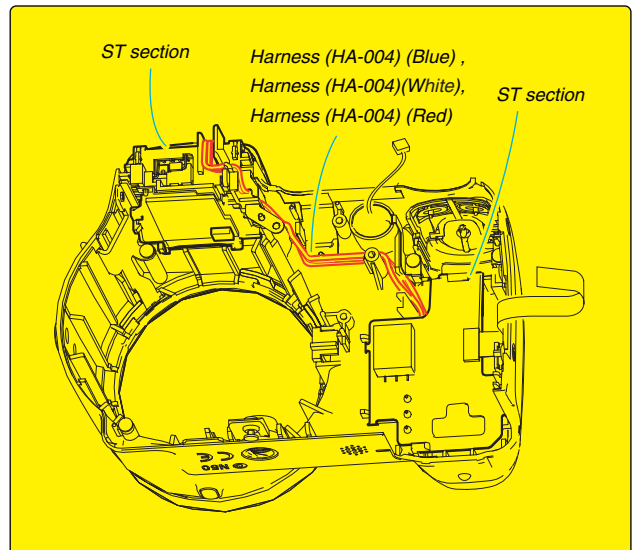
HELP 04

When installing the ST section, route the Harness (HA-004) (Blue), Harness (HA-004)(White), and Harness (HA-004) (Red) as shown in the figure.

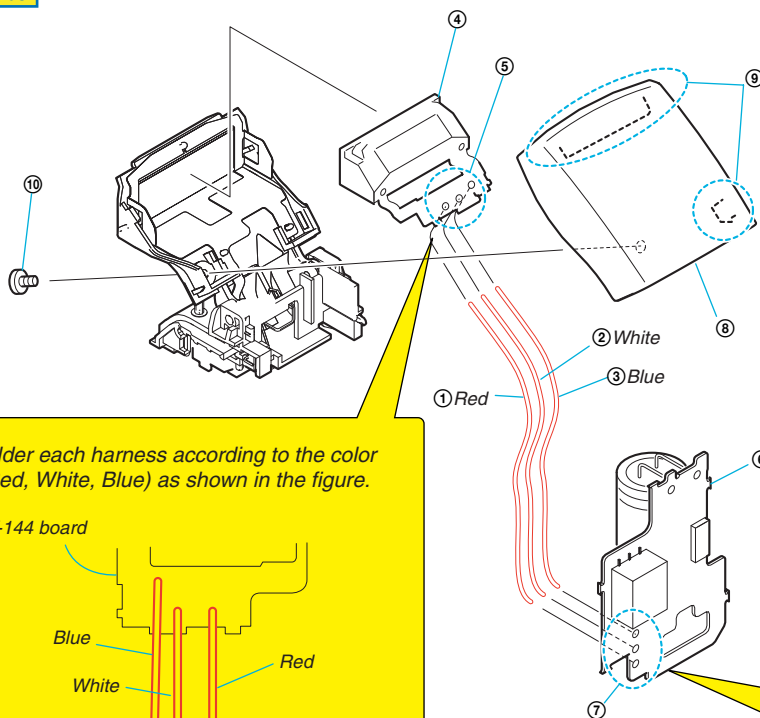


HELP 05

When installing the ST section, route the Harness (HA-004) (Blue), Harness (HA-004)(White), and Harness (HA-004) (Red) as shown in the figure.

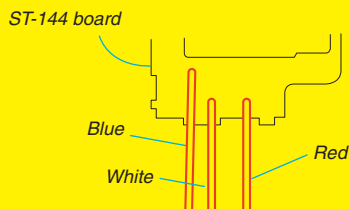


HELP 06

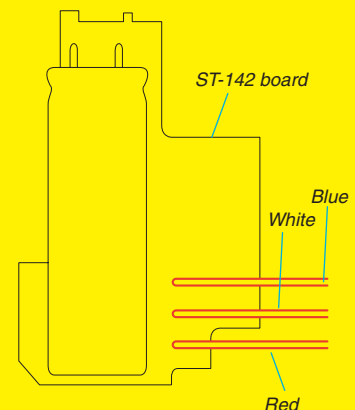


- ① Harness (H-004) (Red)
- ② Harness (H-004) (White)
- ③ Harness (H-004) (Blue)
- ④ Flash unit, ST-144 board
- ⑤ Apply the soldering in three points.
- ⑥ ST-142 board
- ⑦ Apply the soldering in three points.
- ⑧ ST cover
- ⑨ Two claws
- ⑩ Tapping screw (M1.7x4)

Solder each harness according to the color (Red, White, Blue) as shown in the figure.

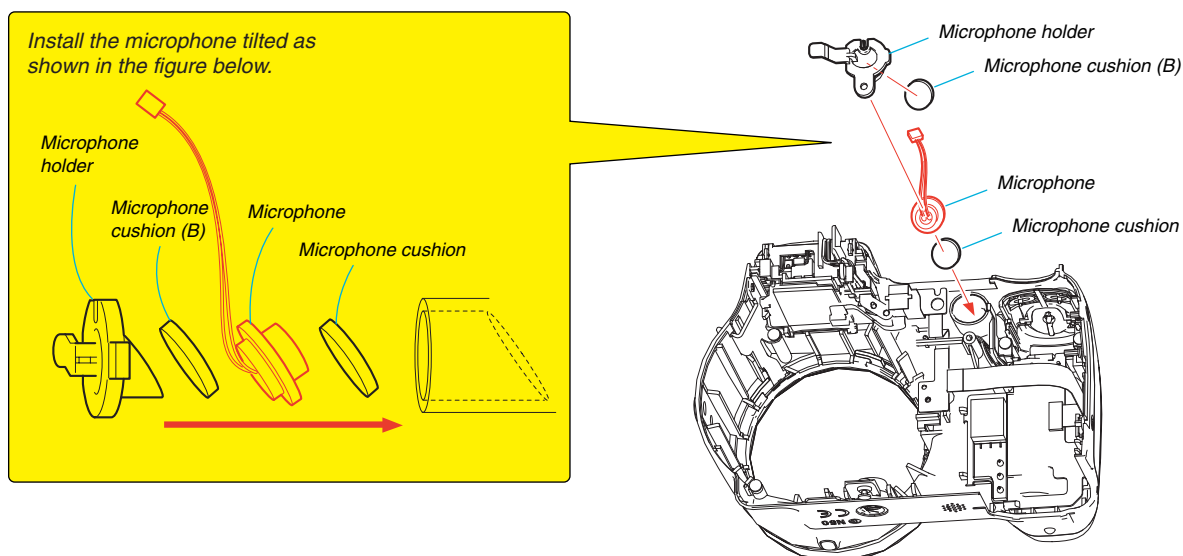


Solder each harness according to the color (Red, White, Blue) as shown in the figure.



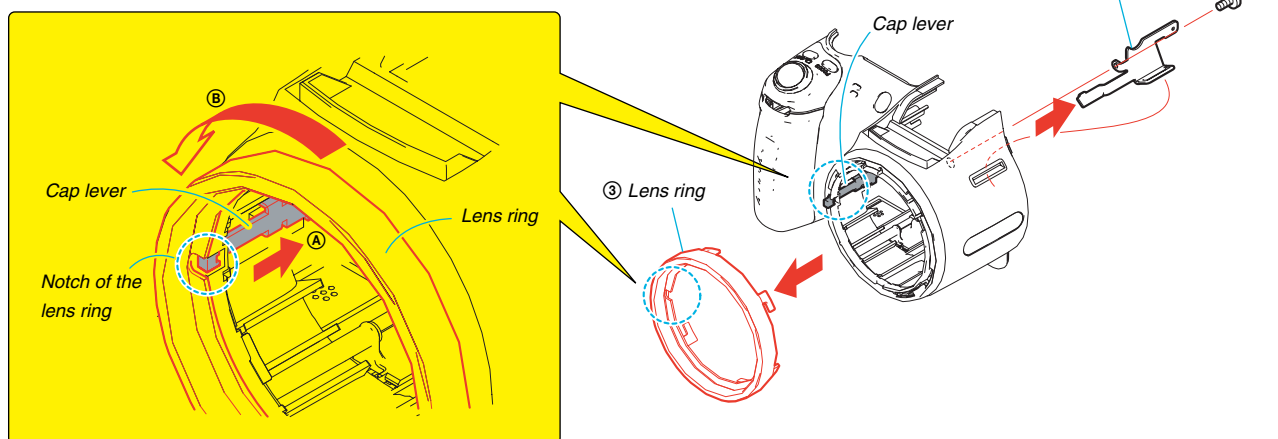
HELP 07

Install the microphone tilted as shown in the figure below.



HELP 08

When removing the lens ring, remove the screw and strap sheet metal (R) first. Slide the cap lever in the direction of arrow (A) while taking care that the cap lever is not caught on the notch of the lens ring. Remove the lens ring by turning it in the direction of arrow (B).



3. BLOCK DIAGRAMS

Link

• OVERALL BLOCK DIAGRAM (1/2)

• POWER BLOCK DIAGRAM (1/2)

• OVERALL BLOCK DIAGRAM (2/2)

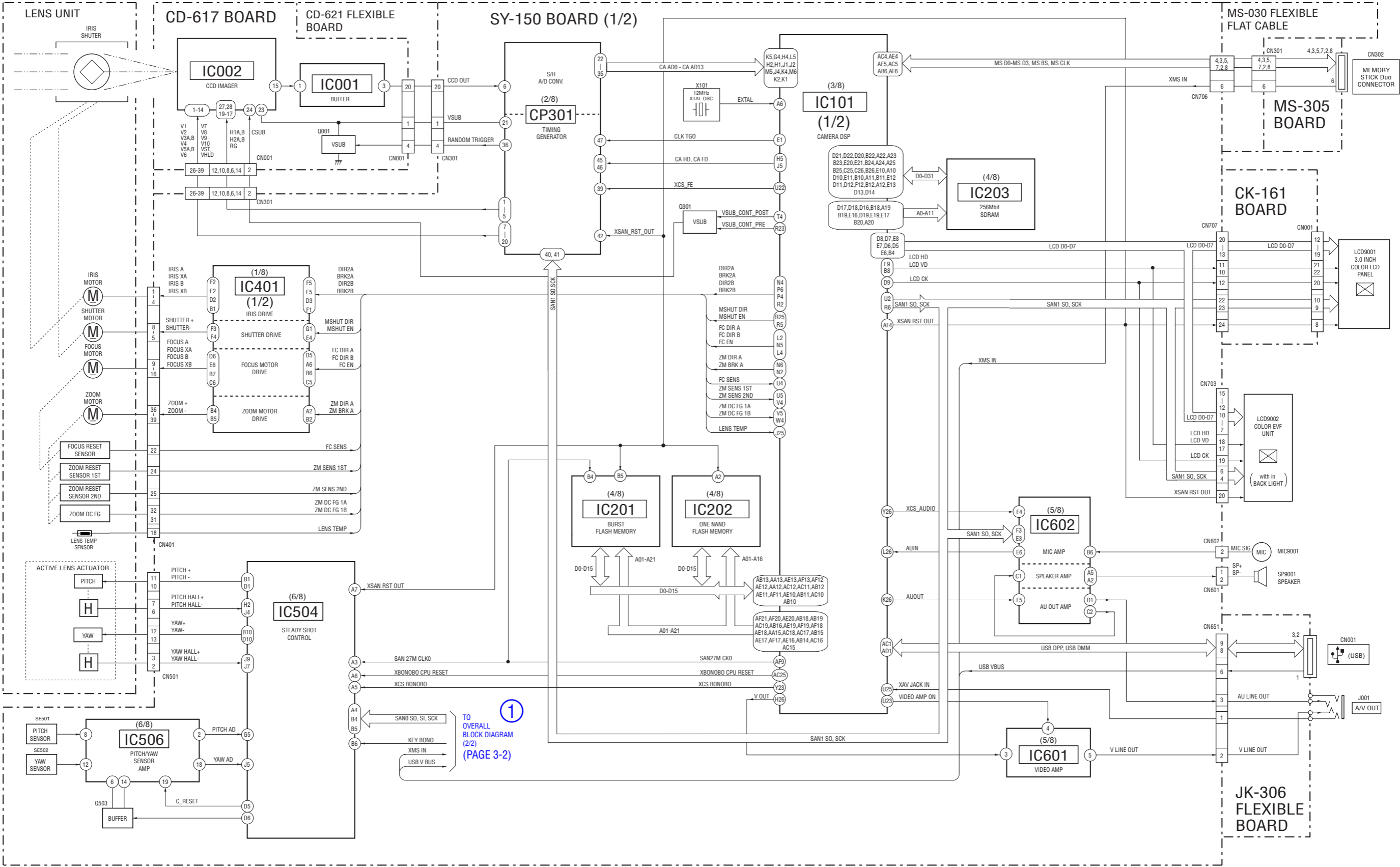
• POWER BLOCK DIAGRAM (2/2)

3. BLOCK DIAGRAMS

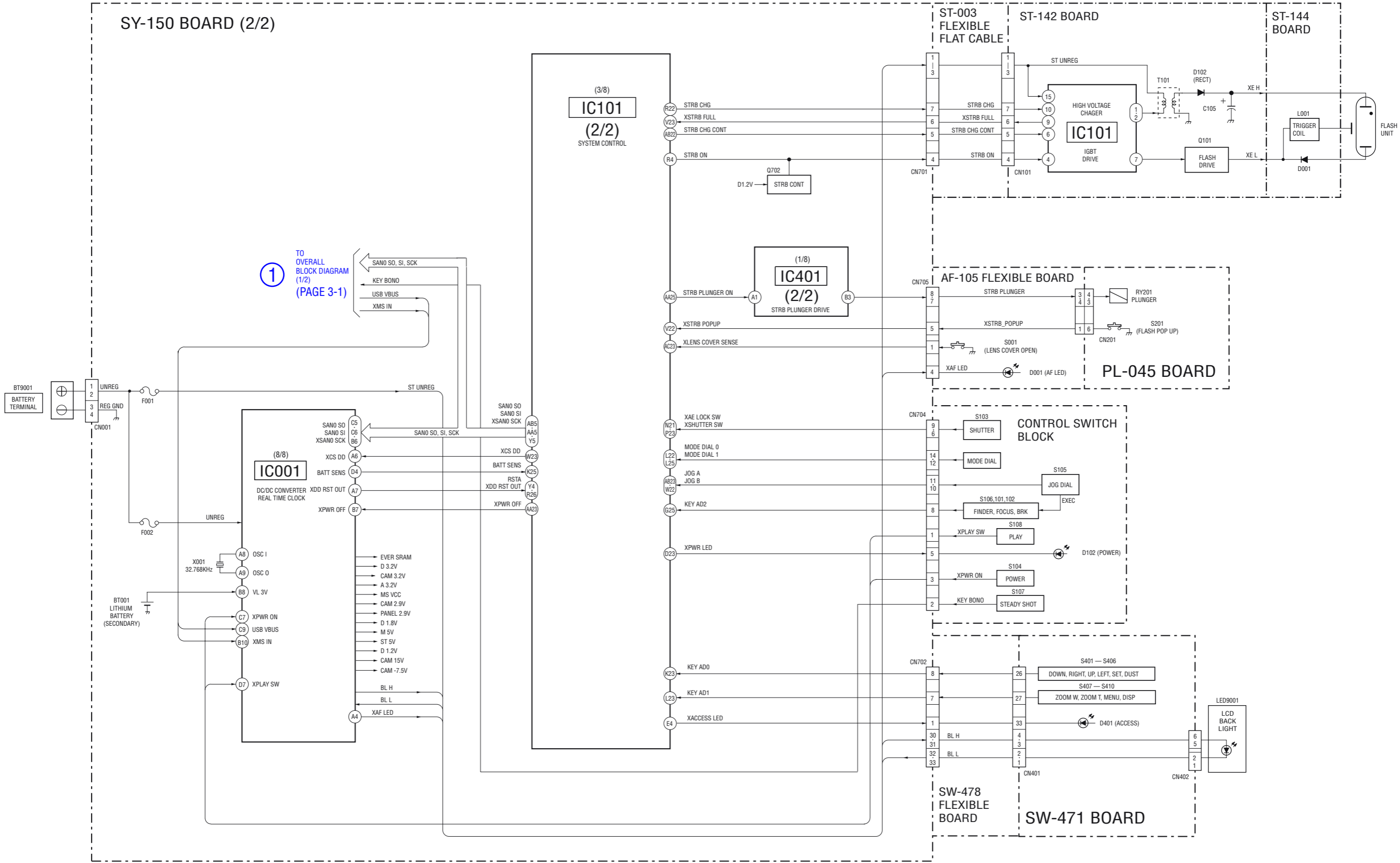
Ver. 1.1 2006. 06

3-1. OVERALL BLOCK DIAGRAM (1/2)

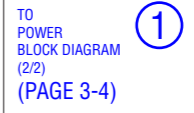
() : Number in parenthesis () indicates the division number of schematic diagram where the component is located.



3-2. OVERALL BLOCK DIAGRAM (2/2) () : Number in parenthesis () indicates the division number of schematic diagram where the component is located.

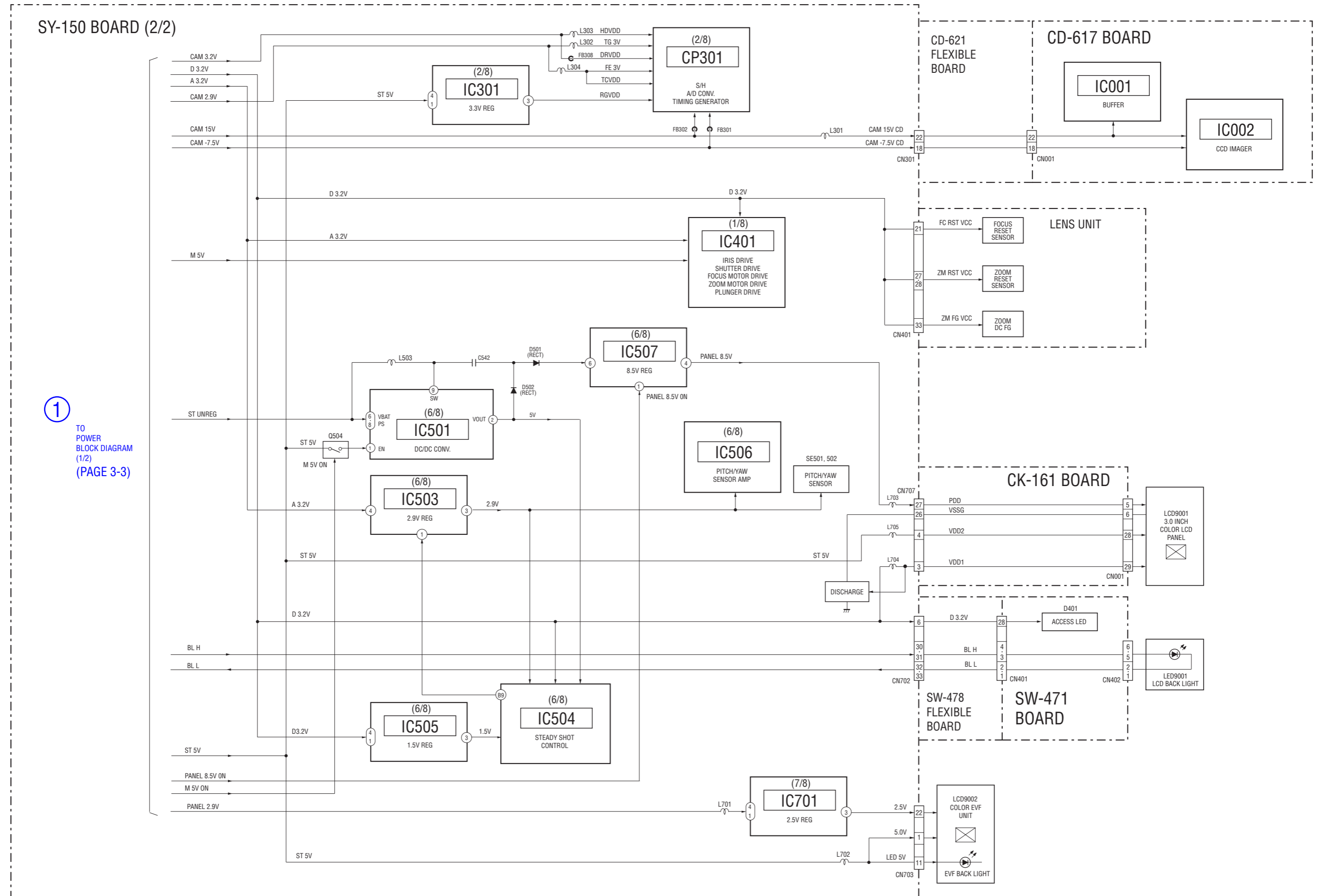


() : Number in parenthesis () indicates the division number of schematic diagram where the component is located.



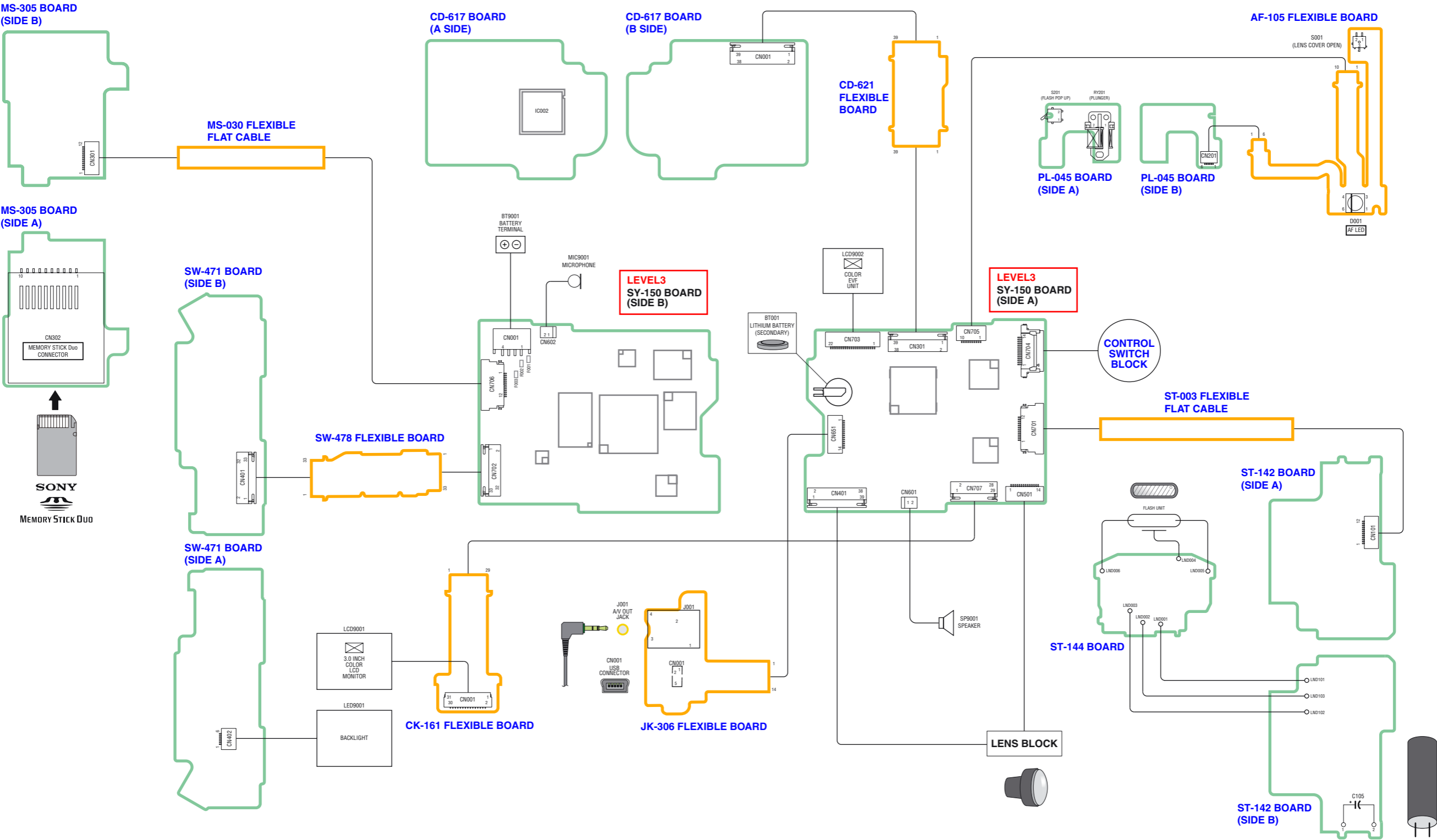
3-4. POWER BLOCK DIAGRAM (2/2)

() : Number in parenthesis () indicates the division number of schematic diagram where the component is located.



4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



4-2. SCHEMATIC DIAGRAMS

Link

• CD-617 BOARD (CCD IMAGER)	• CONTROL SWITCH BLOCK (MODE/JOG DIAL, FUNCTION SW)
• SW-471 BOARD (LCD BACK LIGHT, FUNCTION SWITCH)	• AF-105 FLEXIBLE BOARD (AF LED, LENS COVER SW)
• CK-161 BOARD (LCD PANEL)	• JK-306 FLEXIBLE BOARD (AV/USB JACK)
• ST-142 BOARD (FLASH DRIVE)	• CD-621 FLEXIBLE BOARD (SY-CD RELAY)
• ST-144 BOARD (FLASH)	• SW-478 FLEXIBLE BOARD (SY-SW RELAY)
• MS-305 BOARD (MEMORY STICK)	• MS-030 FLEXIBLE FLAT CABLE (SY-MS RELAY)
• PL-045 BOARD (PLUNGER)	• ST-003 FLEXIBLE FLAT CABLE (SY-ST RELAY)

• COMMON NOTE FOR SCHEMATIC DIAGRAMS

4-2. SCHEMATIC DIAGRAMS

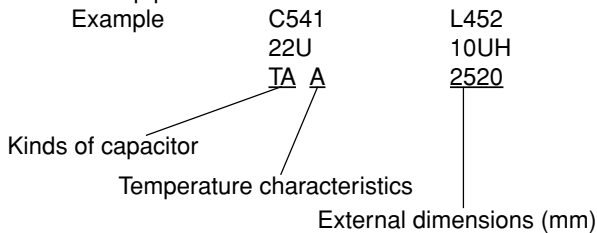
4-2. SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR SCHEMATIC DIAGRAMS

(In addition to this, the necessary note is printed in each block)

(For schematic diagrams)

- All capacitors are in μF unless otherwise noted. pF : μF . 50 V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10 W unless otherwise noted. $\text{k}\Omega=1000 \Omega$, $\text{M}\Omega=1000 \text{k}\Omega$.
- Caution when replacing chip parts.
New parts must be attached after removal of chip.
Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.



- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.
In such cases, the unused circuits may be indicated.
- Parts with * differ according to the model/destination.
Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
XEDIT → EDIT PB/XREC → PB/REC
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line
- : B- Line
- : IN/OUT direction of (+,-) B LINE.
- : adjustment for repair.

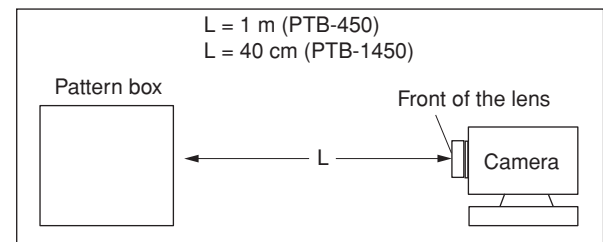
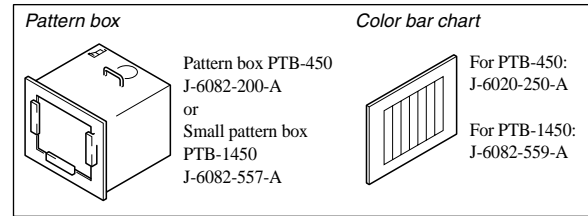
(Measuring conditions voltage)

- Voltages are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values.
(VOM of DC 10 $\text{M}\Omega$ input impedance is used)
- Voltage values change depending upon input impedance of VOM used.)

Precautions for Replacement of imager

- If the imager has been replaced, carry out all the adjustments for the camera section.
- As the imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC.
In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

1. Connection



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

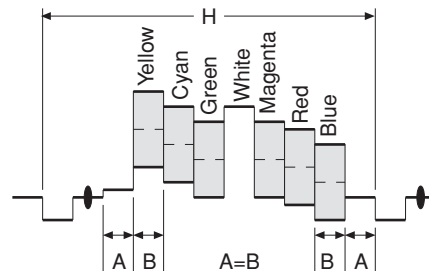


Fig. a (Video output terminal output waveform)

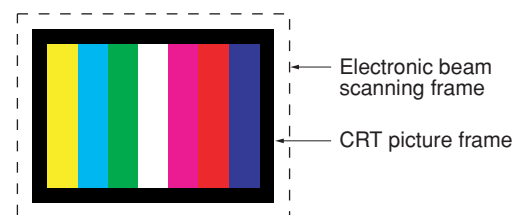


Fig.b (Picture on monitor TV)

When indicating parts by reference number, please include the board name.

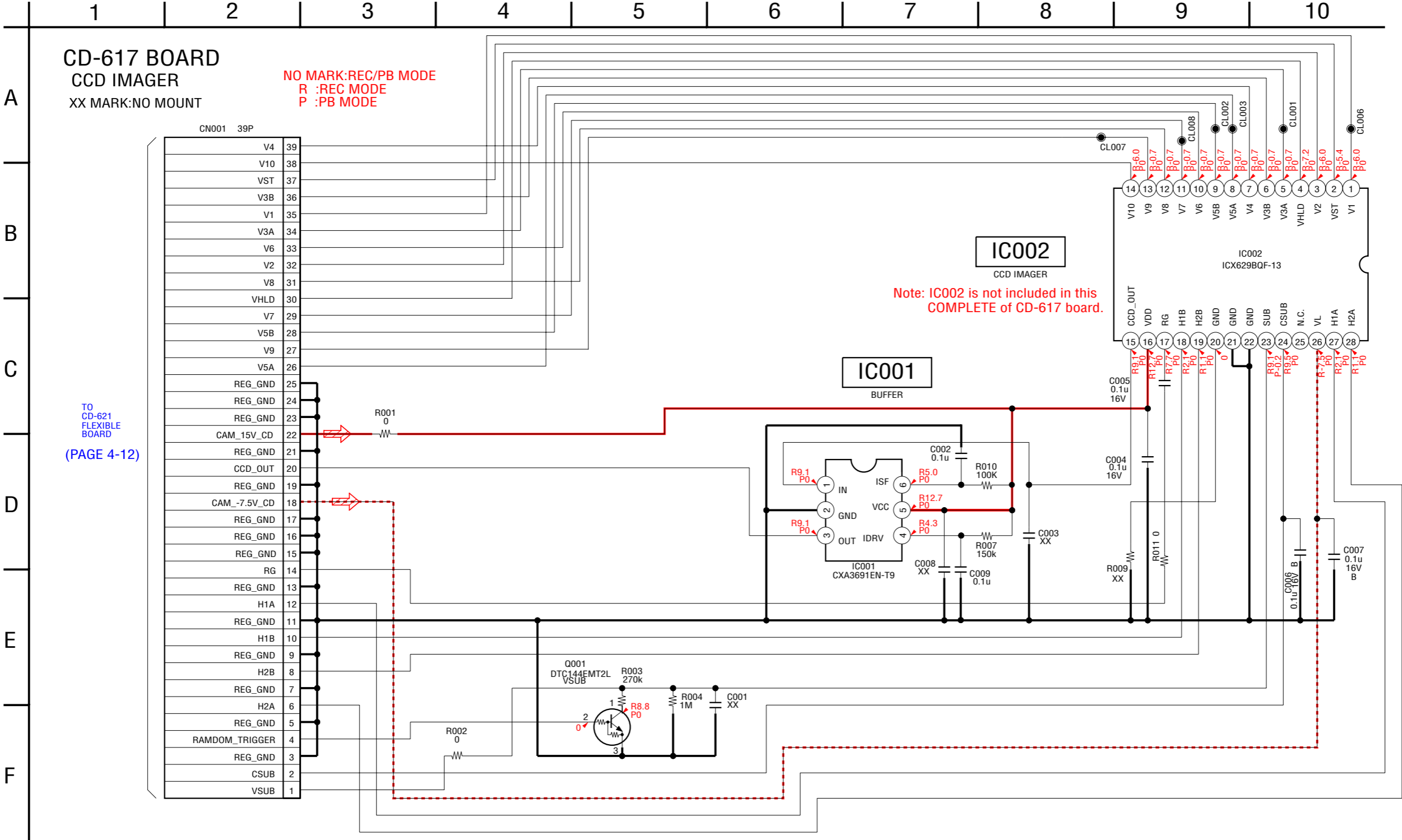
Note :

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

Note :

Les composants identifiés par une marque Δ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

4-2. SCHEMATIC DIAGRAMS



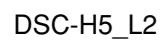
A

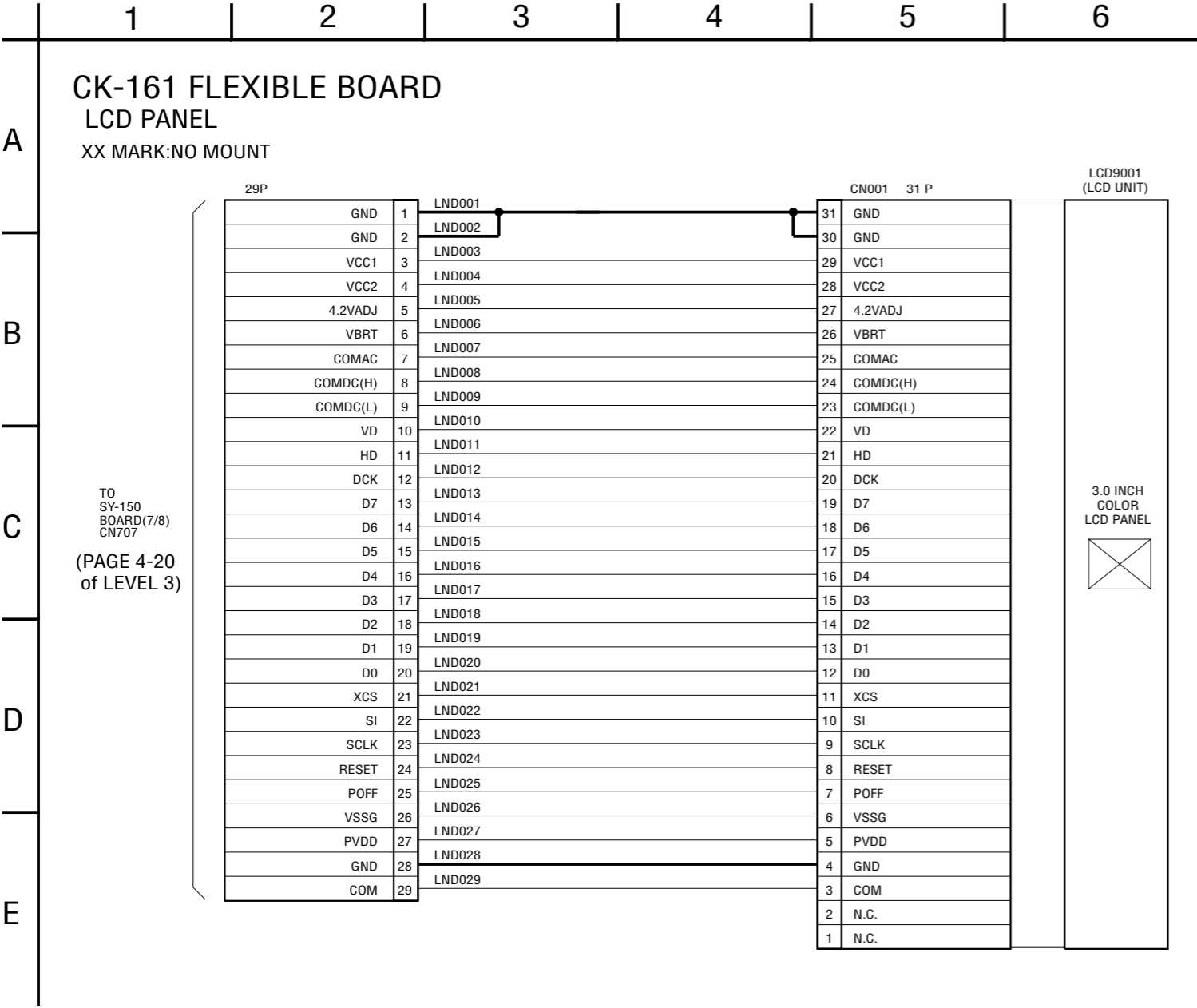
B

C

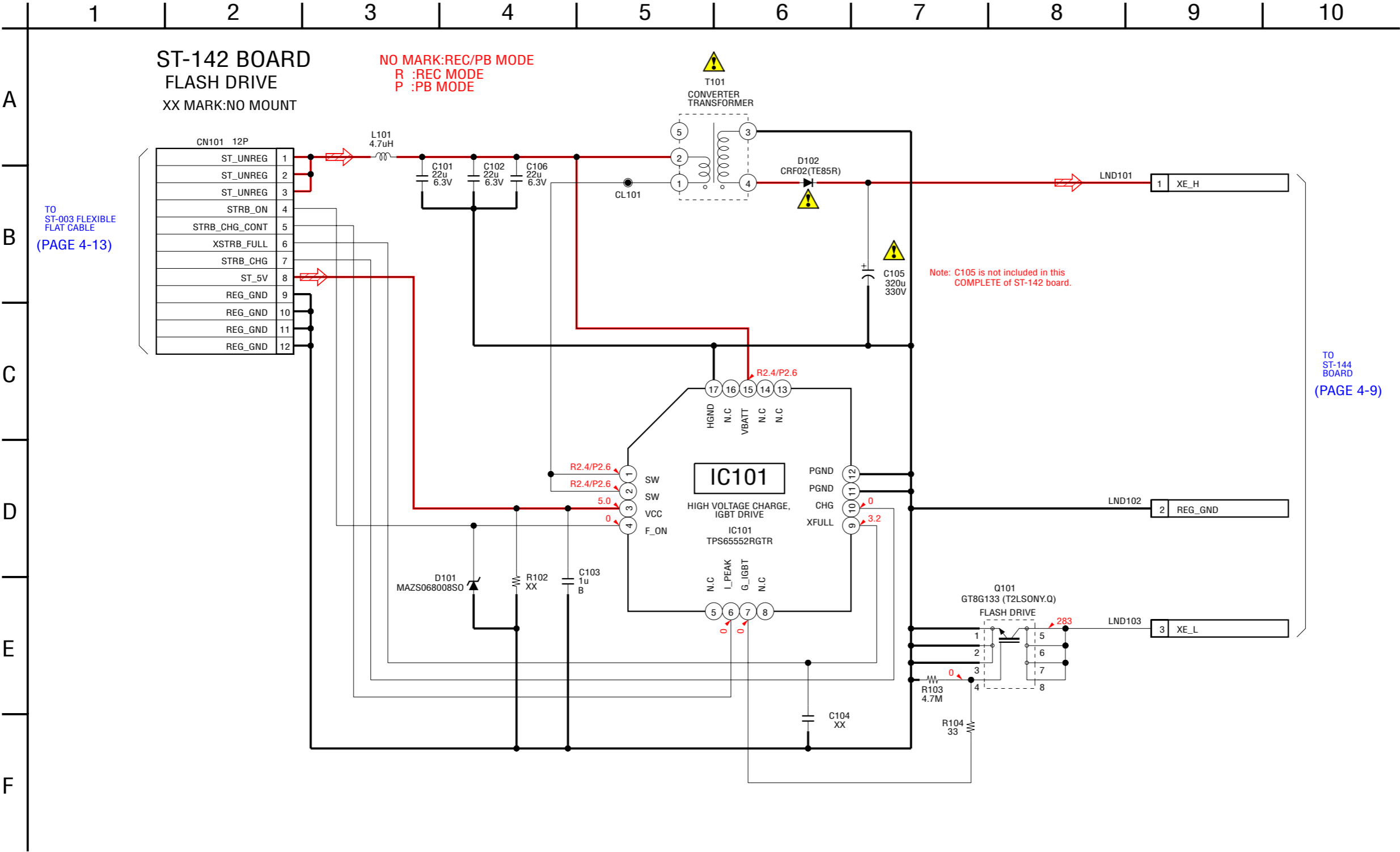
D

E

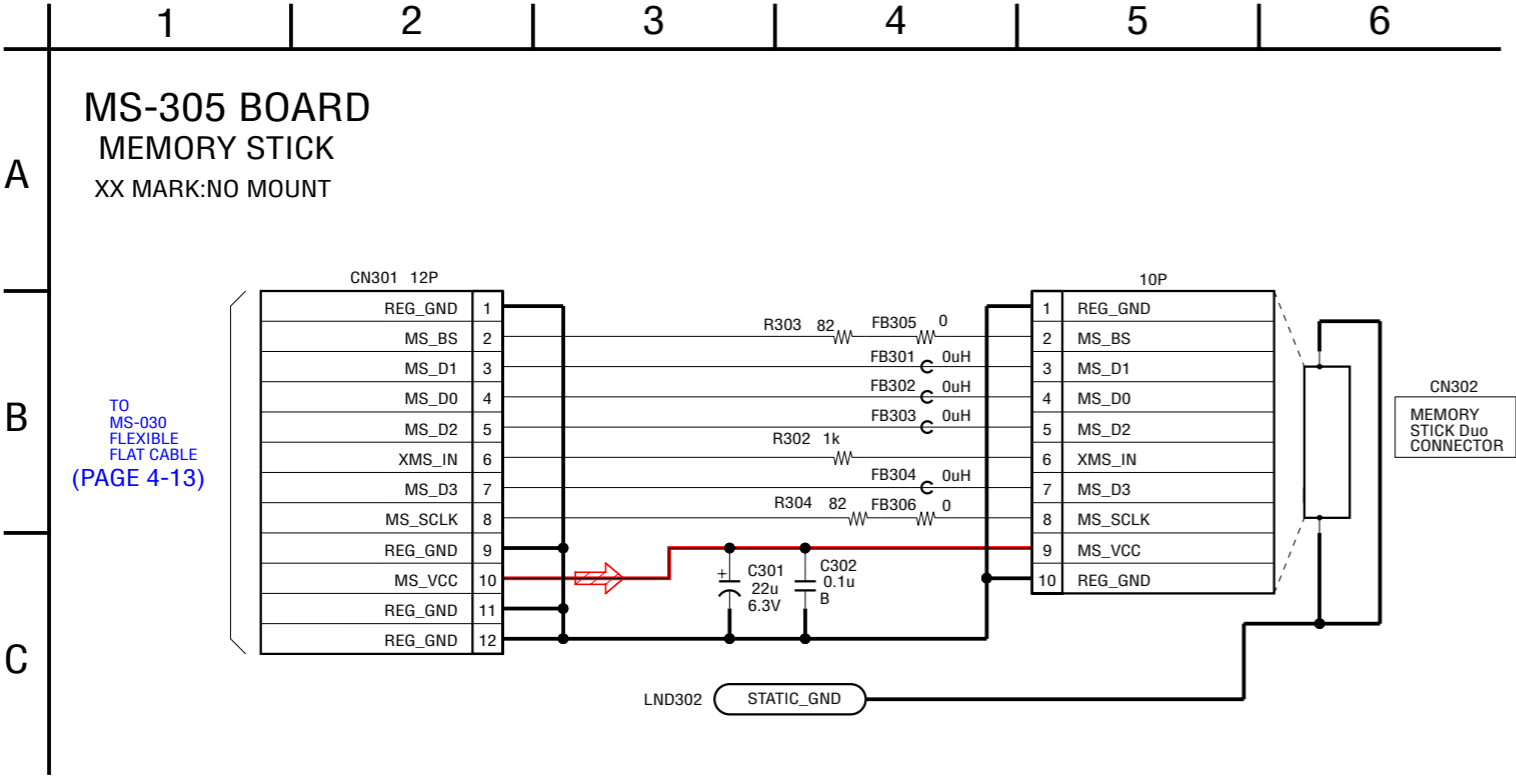
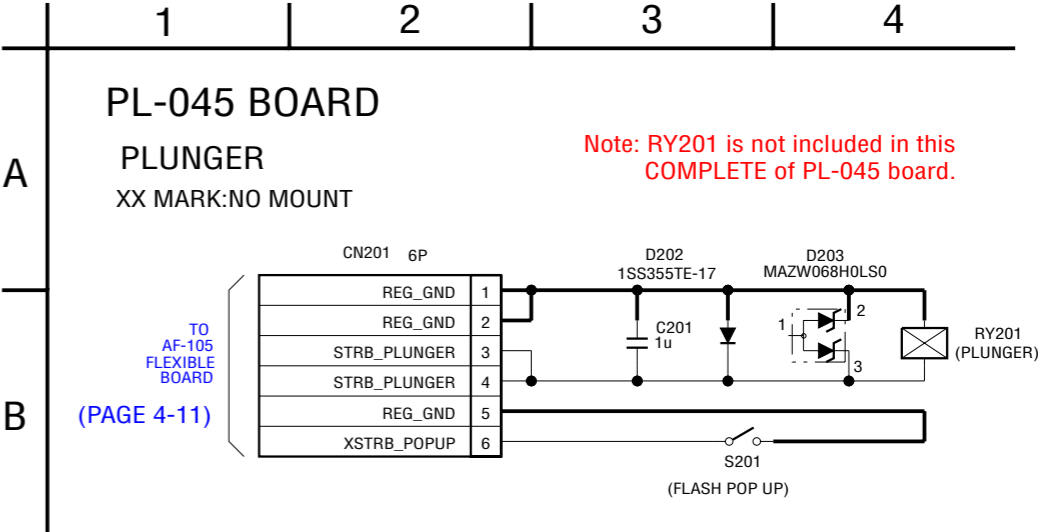
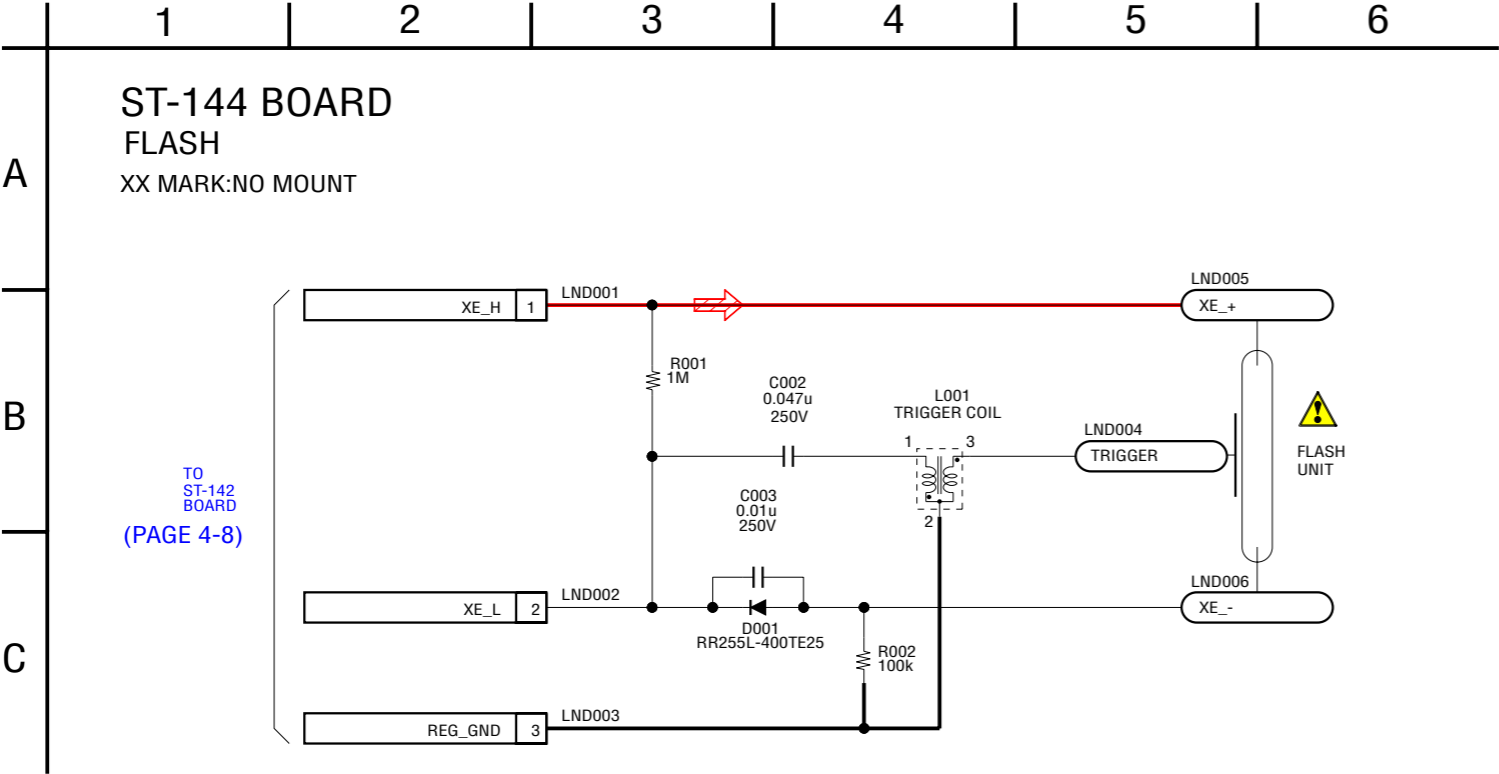


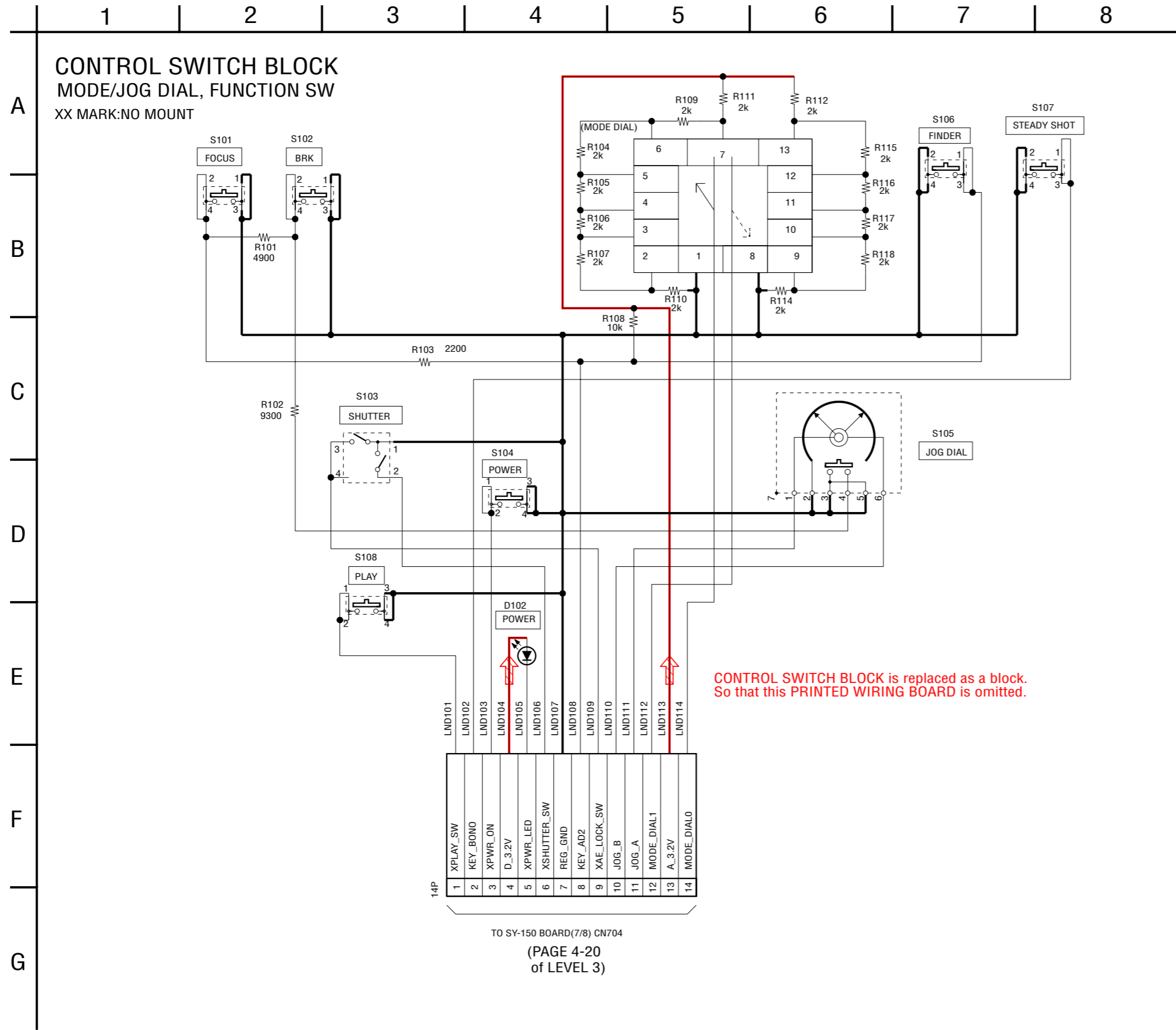


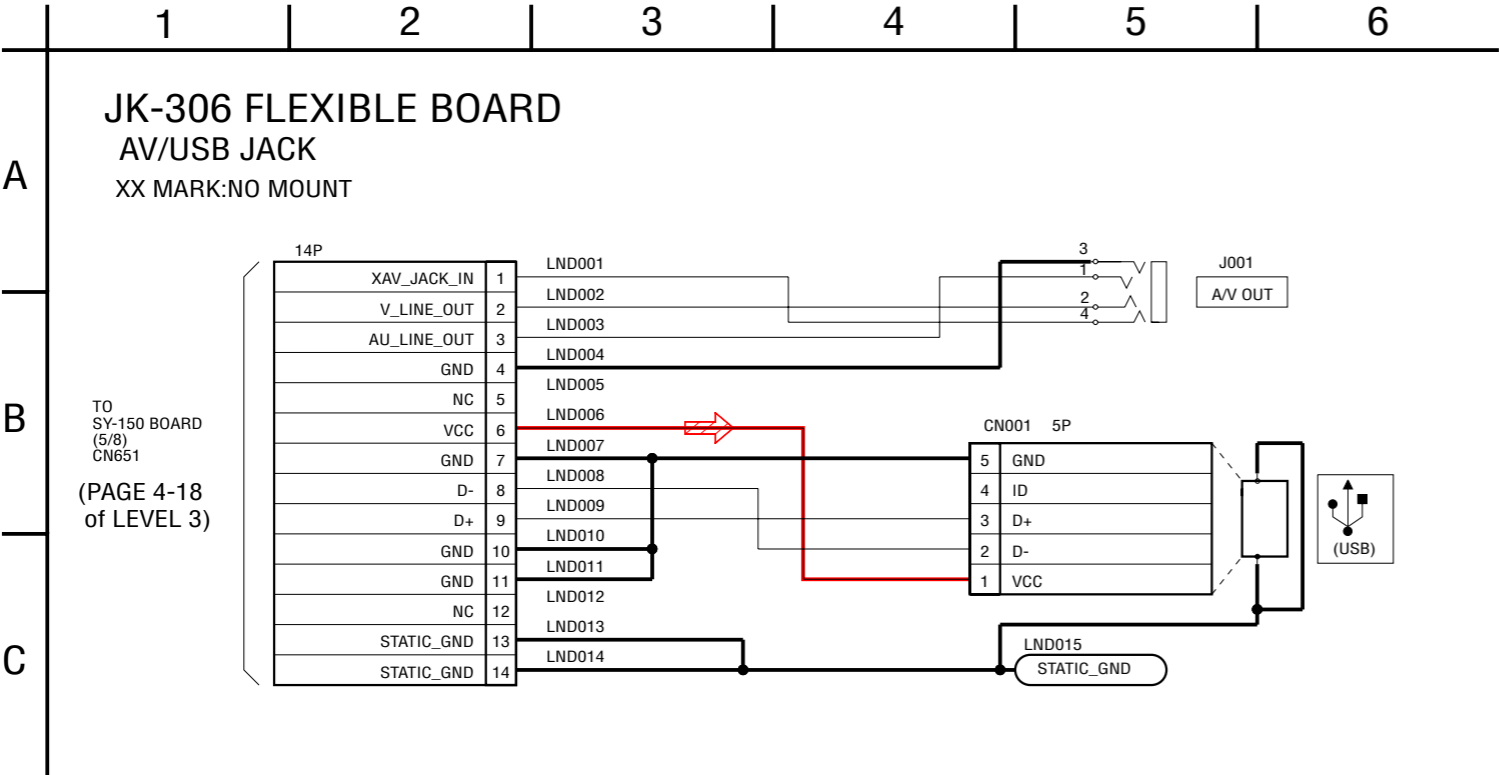
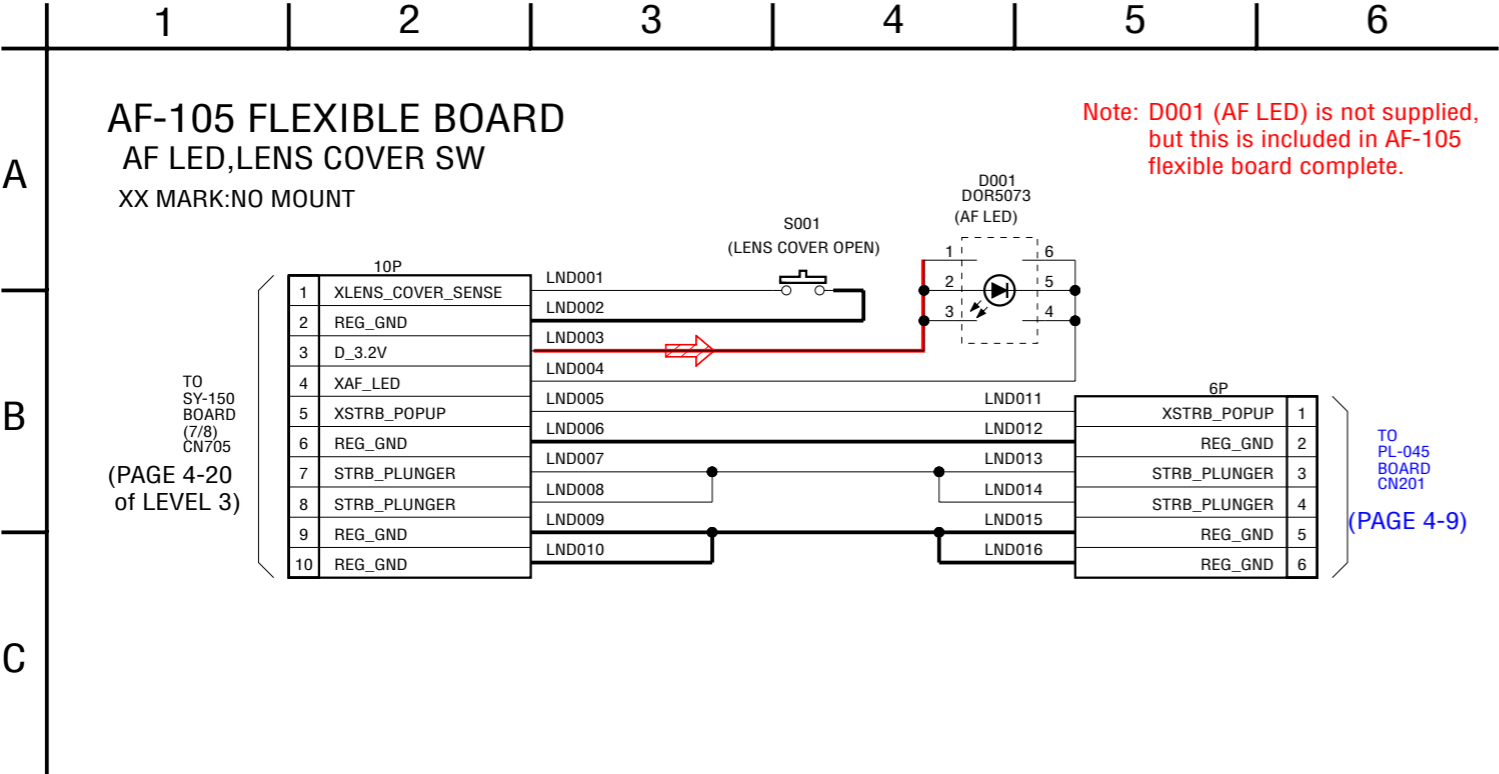
• Refer to page 4-3 for mark ▲.

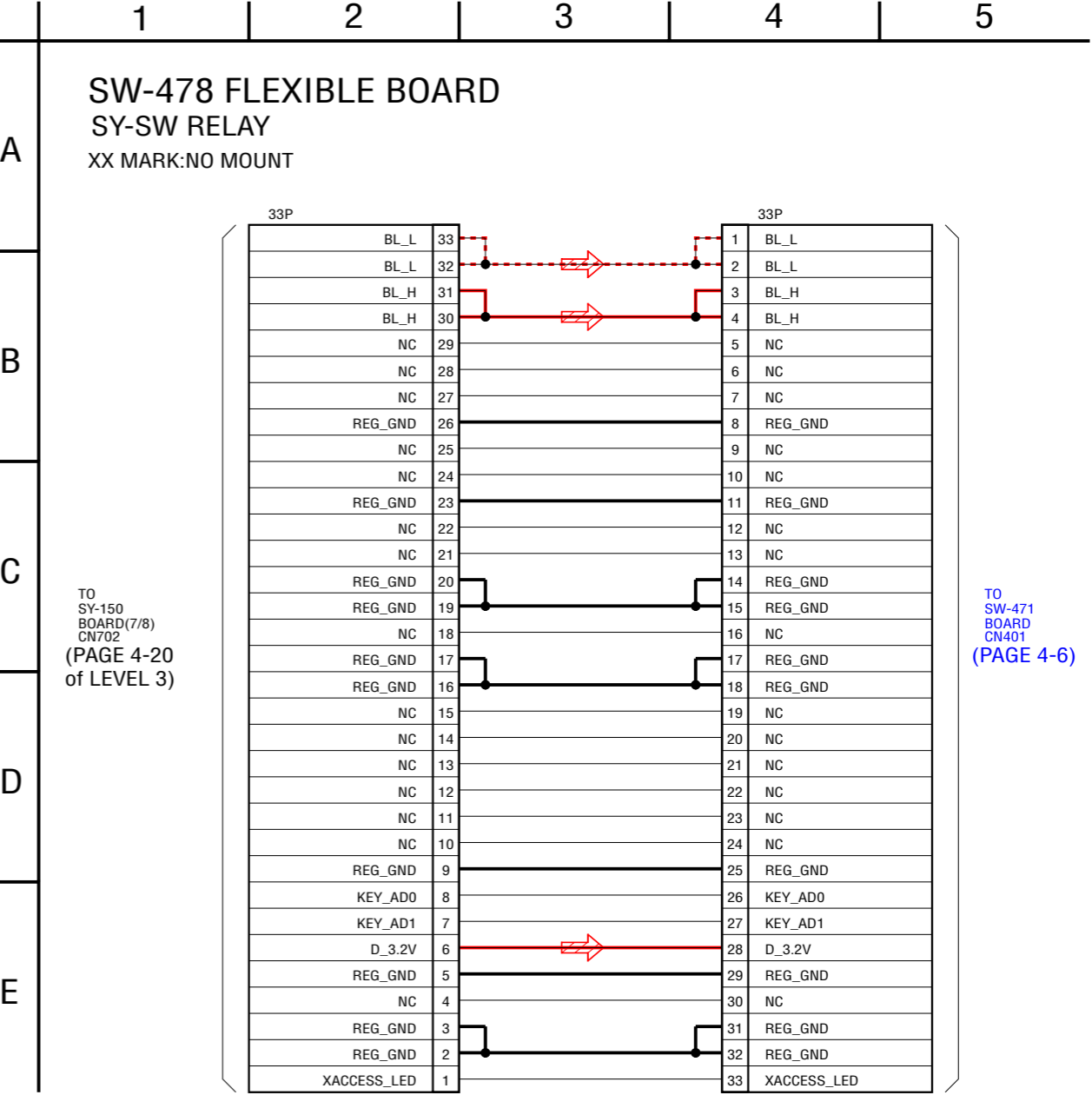
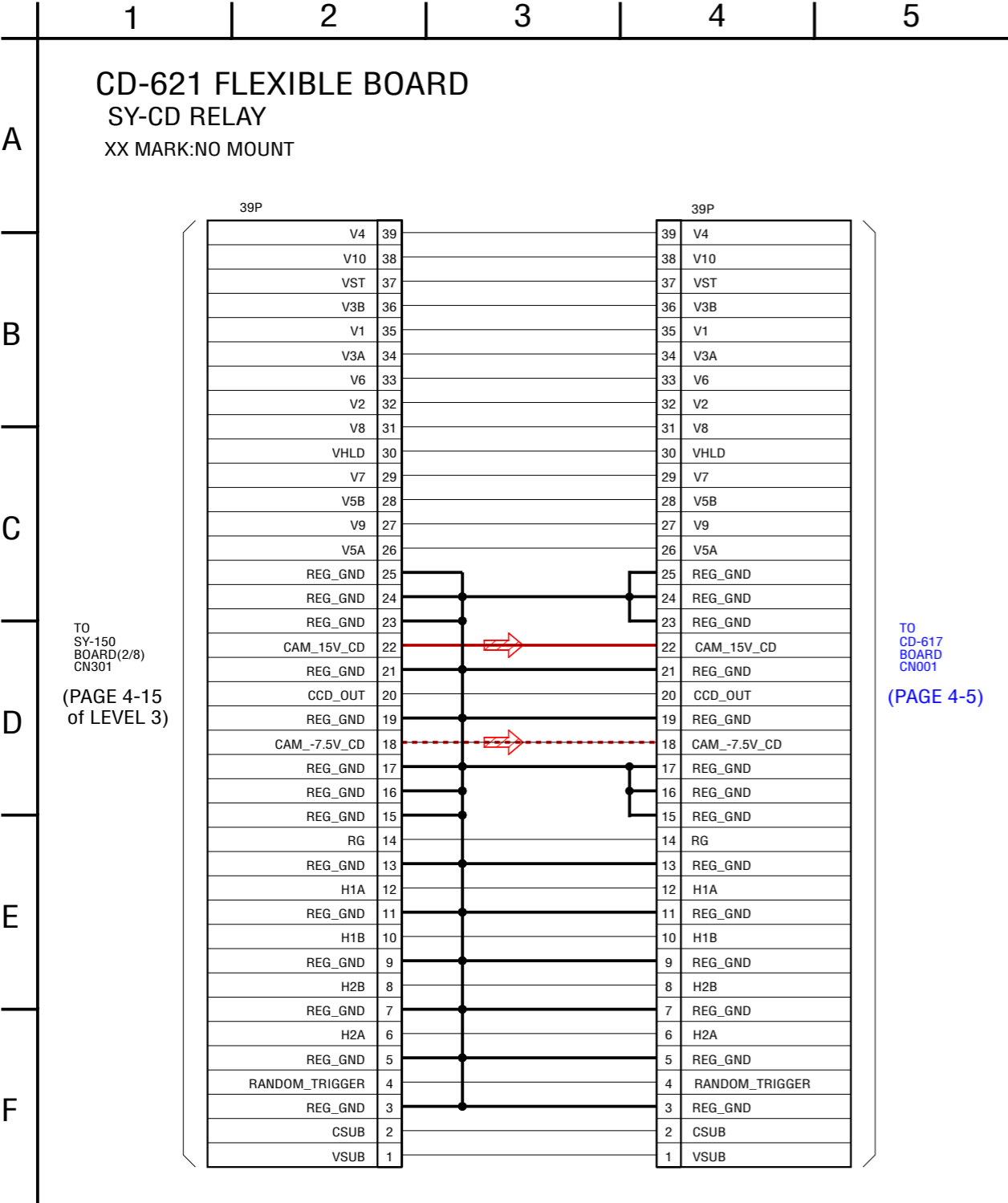


• Refer to page 4-3 for mark ▲.









4-3. PRINTED WIRING BOARDS

Link

• CD-617 BOARD	• AF-105 FLEXIBLE BOARD
• SW-471 BOARD	• JK-306 FLEXIBLE BOARD
• ST-142 BOARD	• CD-621 FLEXIBLE BOARD
• ST-144 BOARD	• SW-478 FLEXIBLE BOARD
• MS-305 BOARD	• CK-161 FLEXIBLE BOARD
• PL-045 BOARD	

• COMMON NOTE FOR PRINTED WIRING BOARDS	• MOUNTED PARTS LOCATION
---	--




4-3. PRINTED WIRING BOARDS

4-3. PRINTED WIRING BOARDS

THIS NOTE IS COMMON FOR WIRING BOARDS

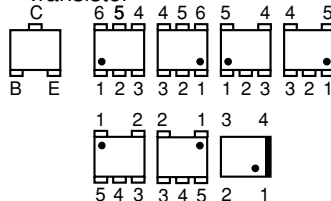
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)

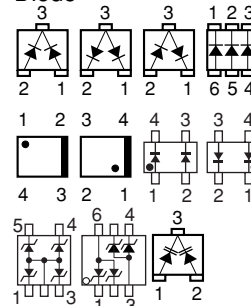
-  : Uses unleaded solder.
-  : Pattern from the side which enables seeing.
(The other layers' patterns are not indicated)
- Through hole is omitted.
- There are a few cases that the part printed on diagram isn't mounted in this model.
-  : panel designation

• Chip parts.

Transistor

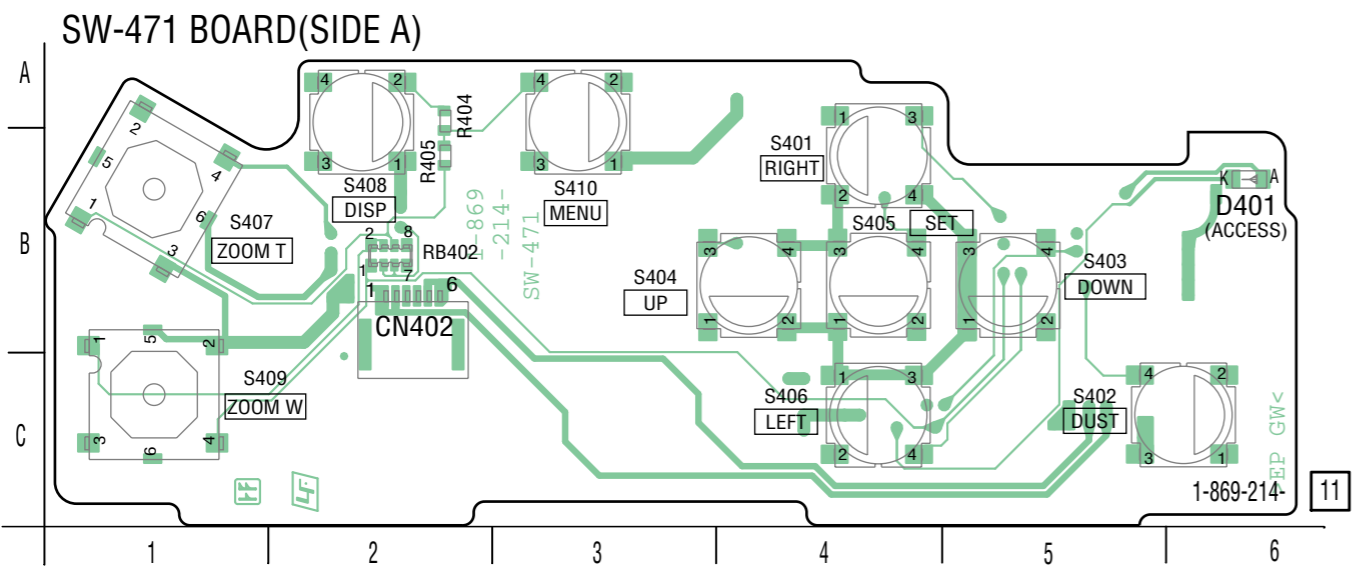
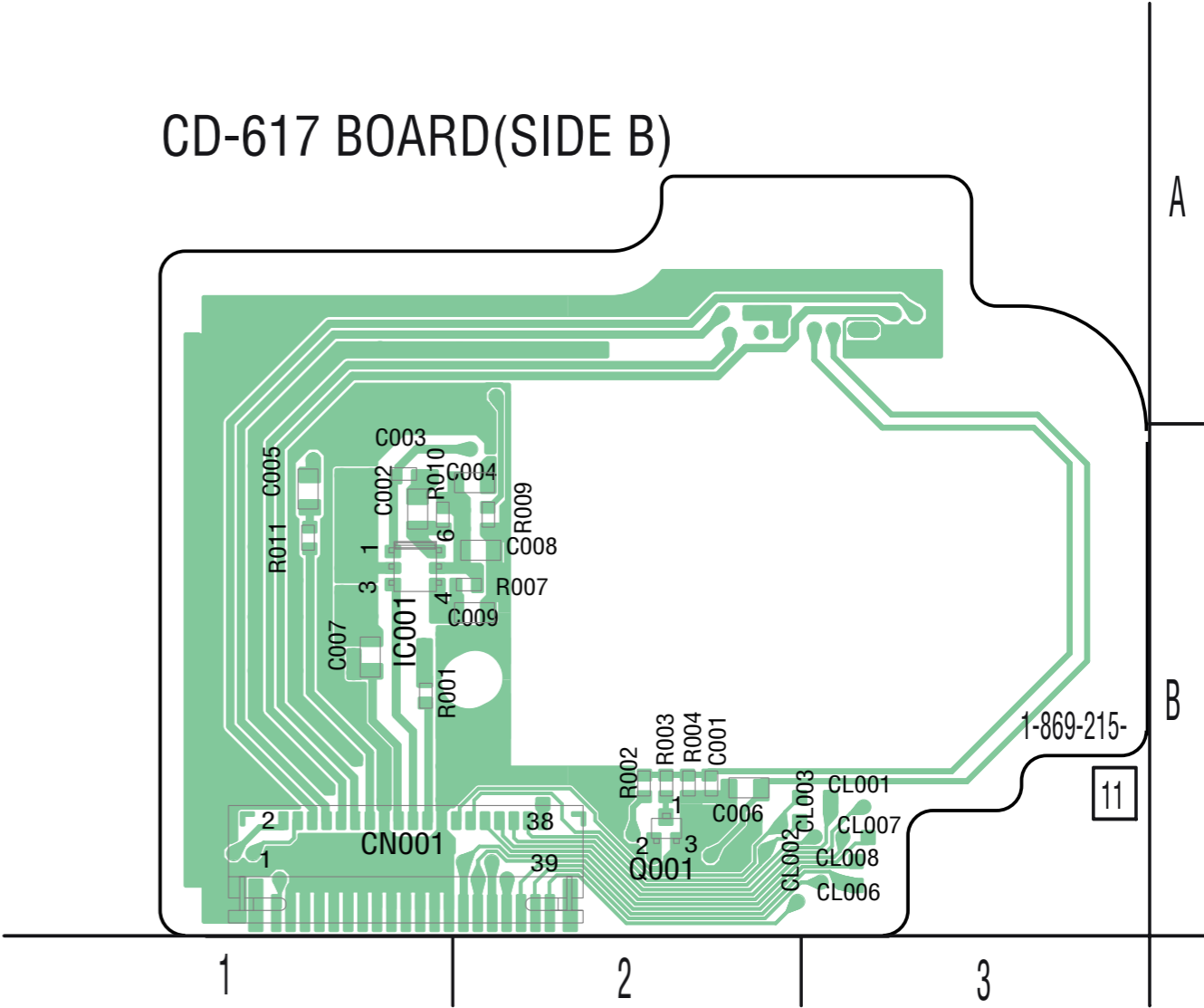
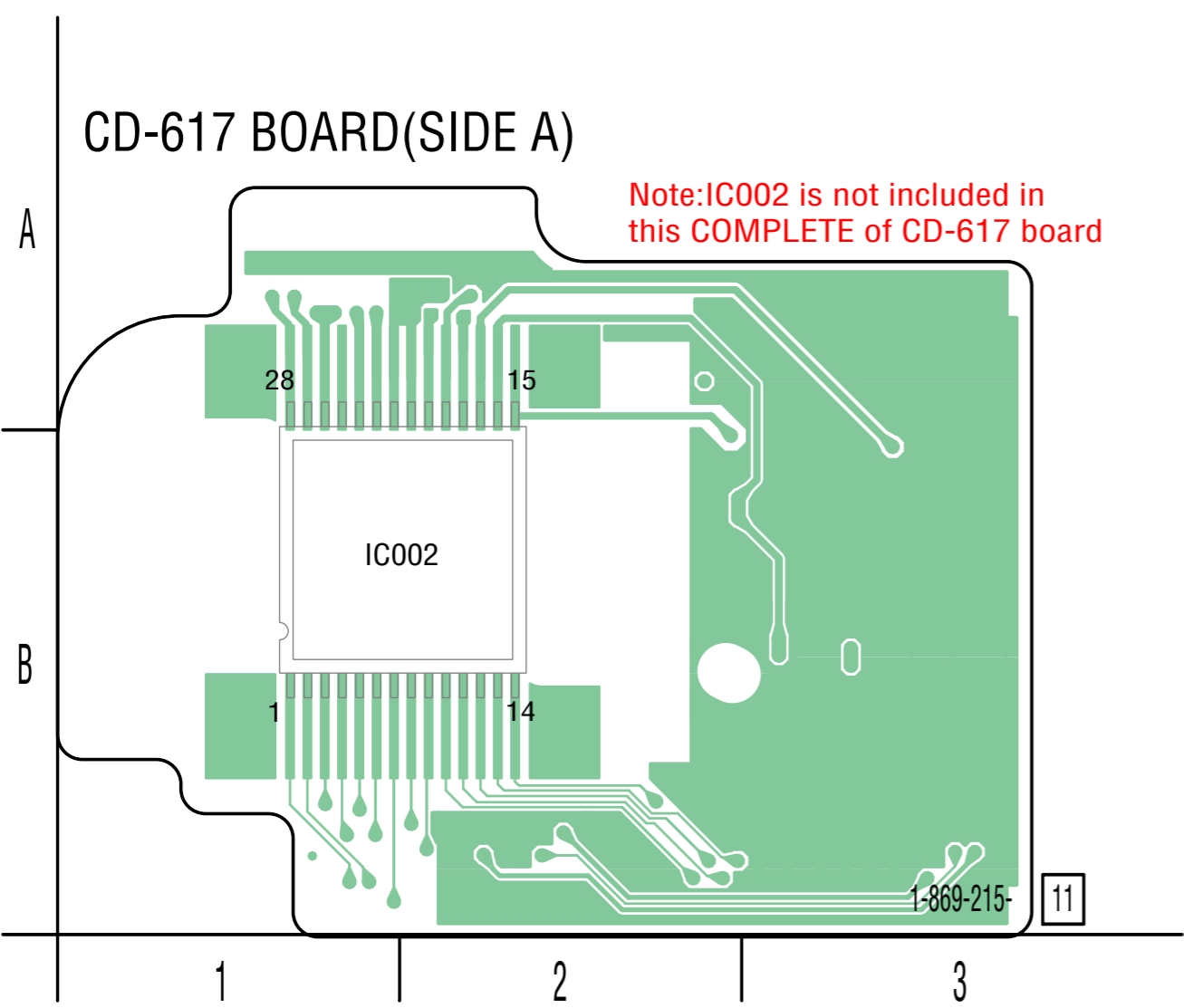


Diode

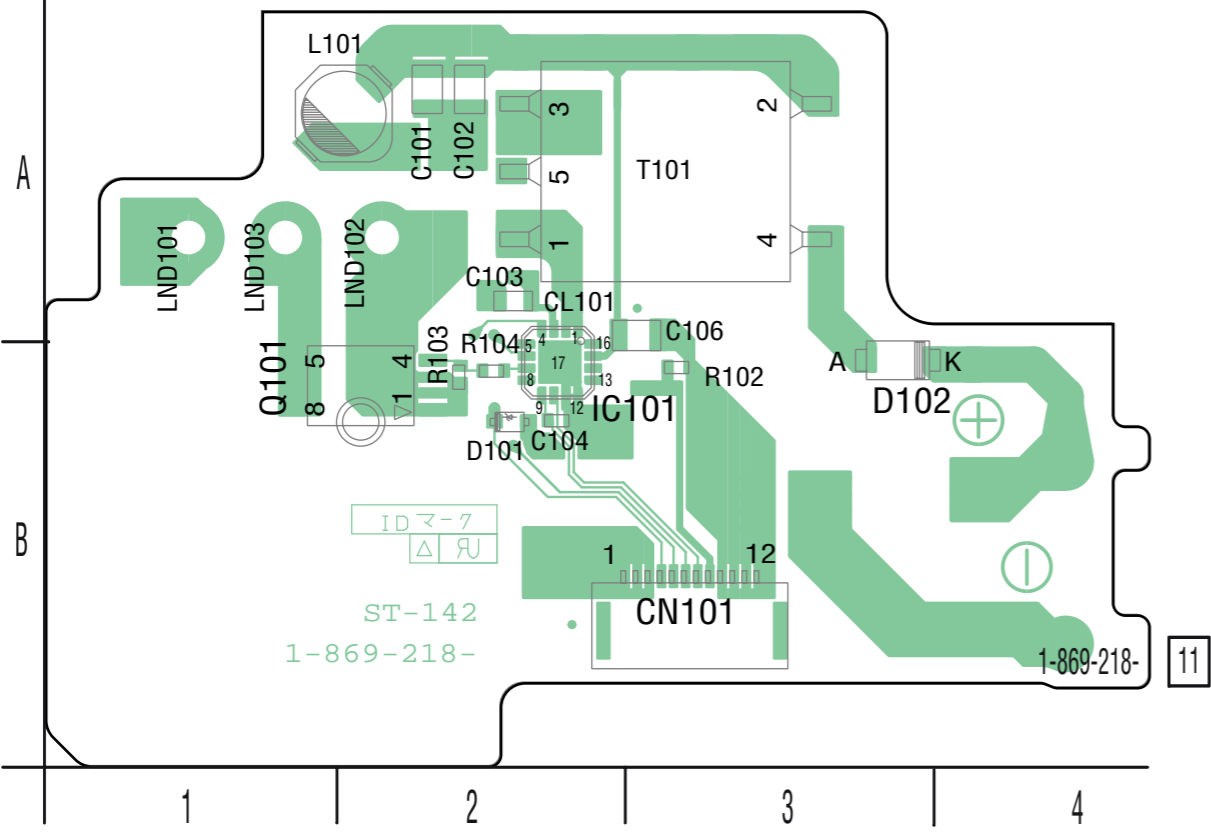


4-3. PRINTED WIRING BOARDS

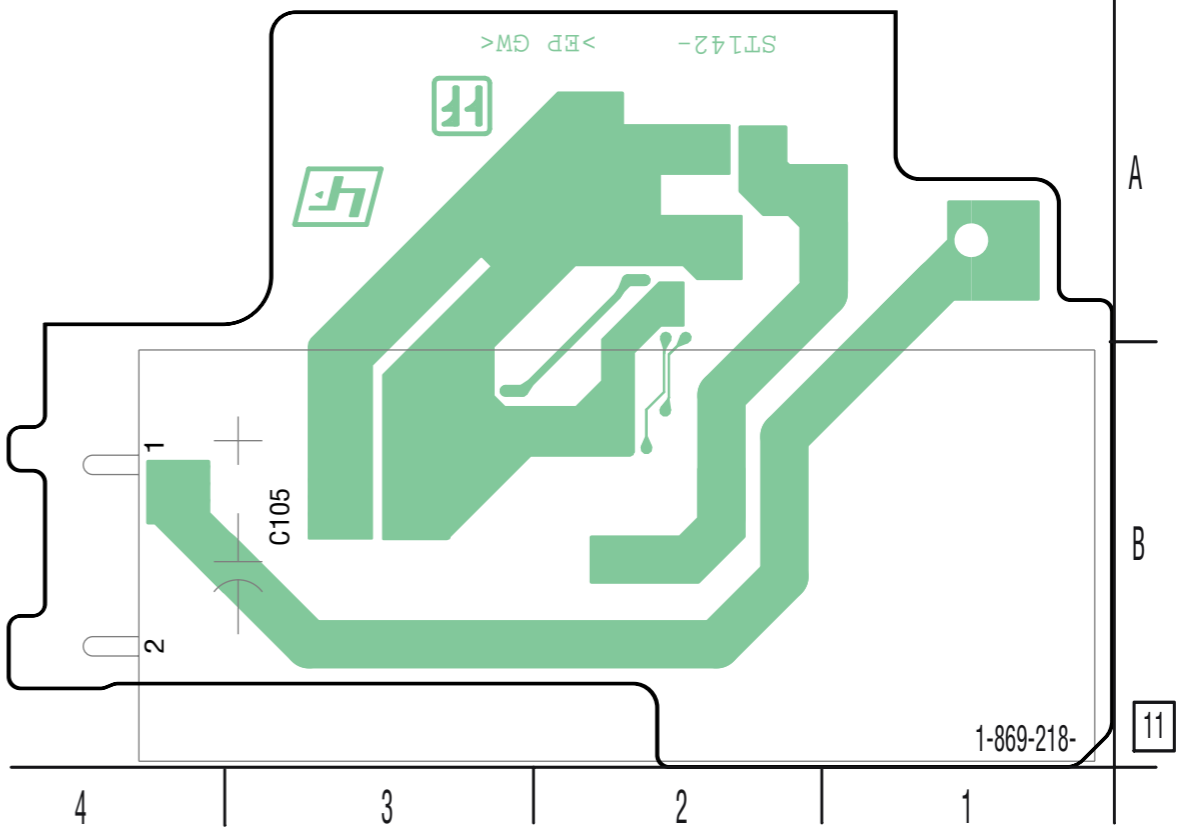
CD-617 (4 layers), SW-471 (4 layers) •  : Uses unleaded solder.



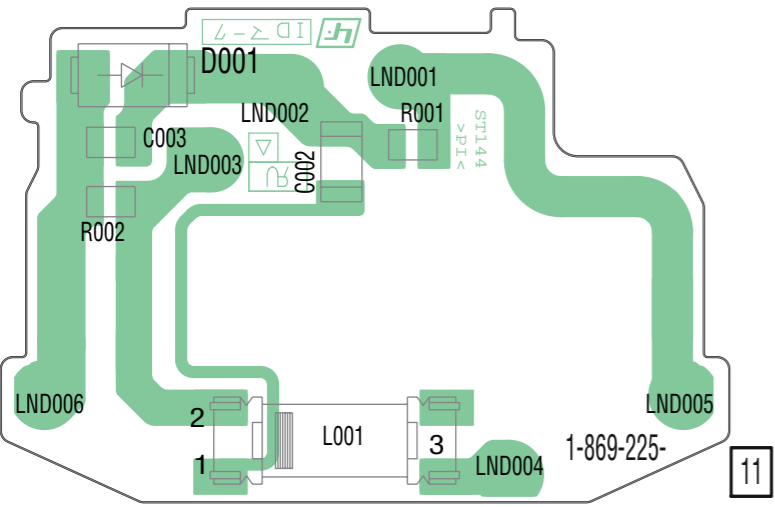
ST-142 BOARD(SIDE A)



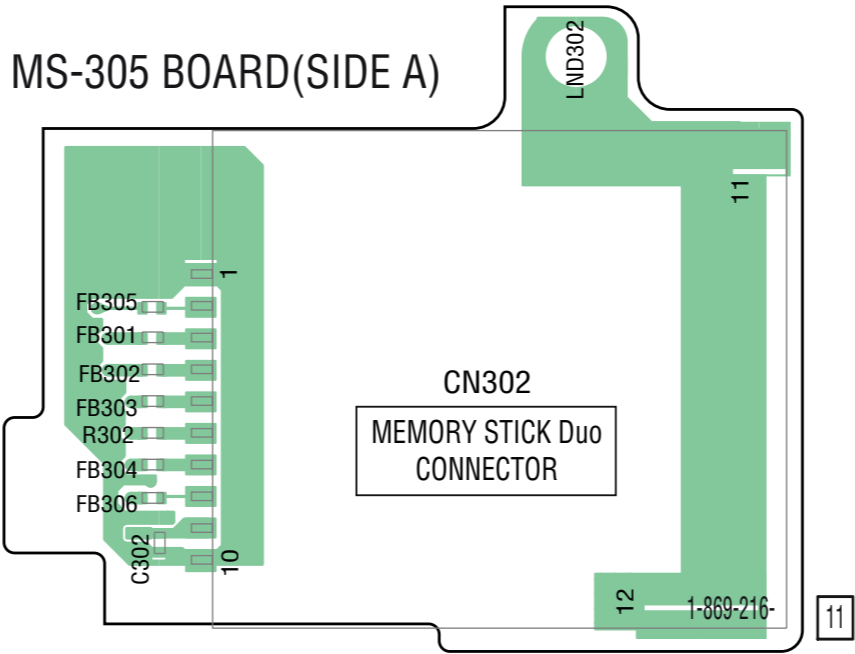
ST-142 BOARD(SIDE B)



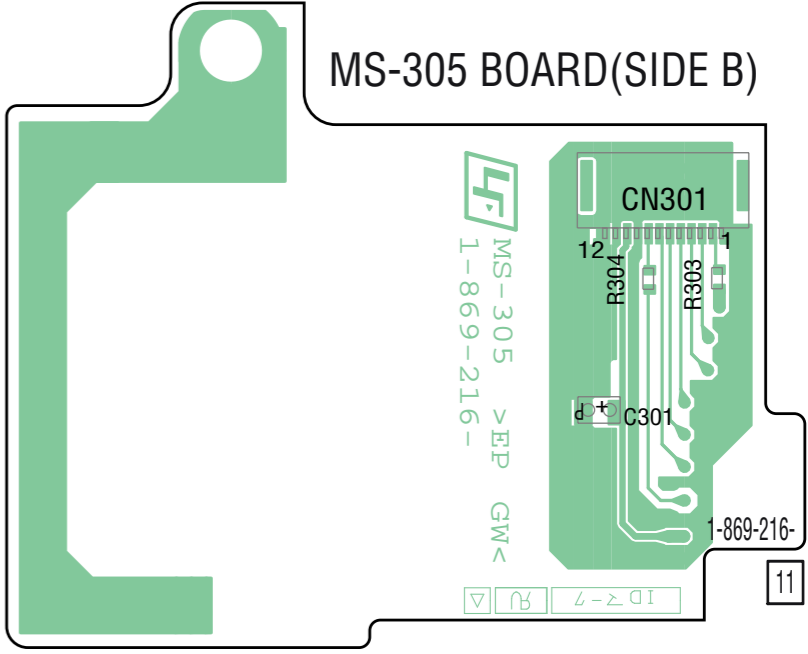
ST-144 BOARD



MS-305 BOARD(SIDE A)

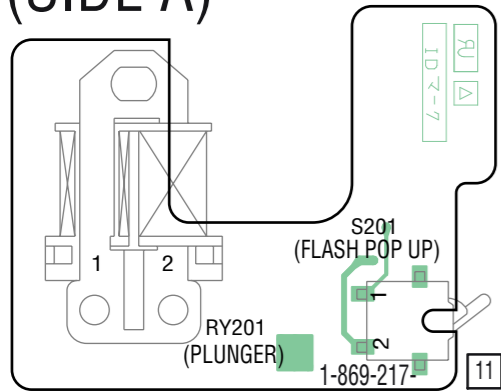


MS-305 BOARD(SIDE B)



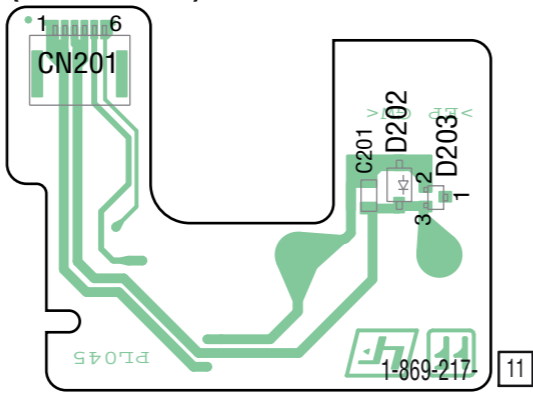
PL-045 (2 layers), AF-105 FLEXIBLE (1 layer), JK-306 FLEXIBLE (1 layer) •  : Uses unleaded solder.

PL-045 BOARD (SIDE A)

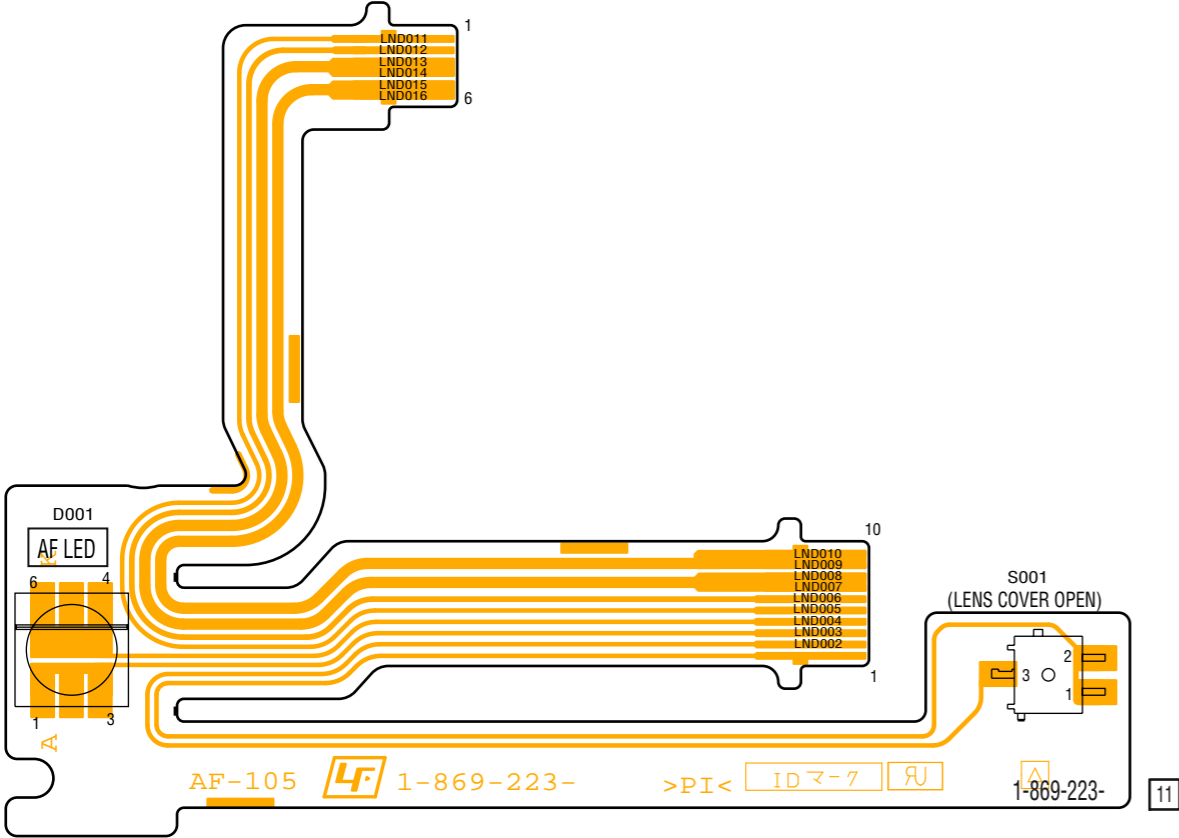


Note: RY201 is not included in this COMPLETE of PL-045 board.

PL-045 BOARD (SIDE B)

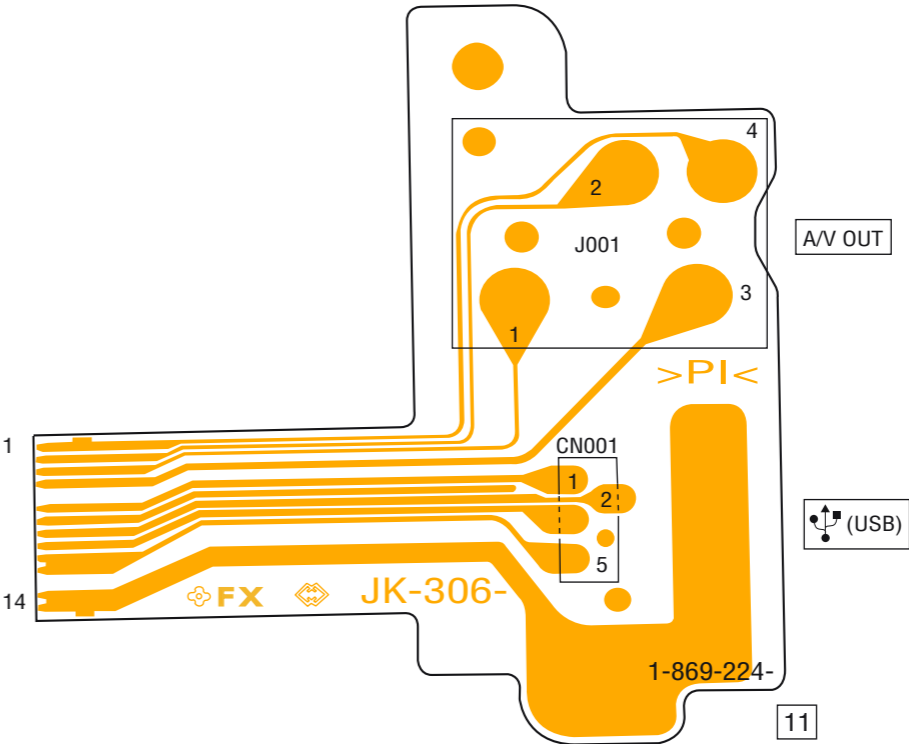


AF-105 FLEXIBLE BOARD

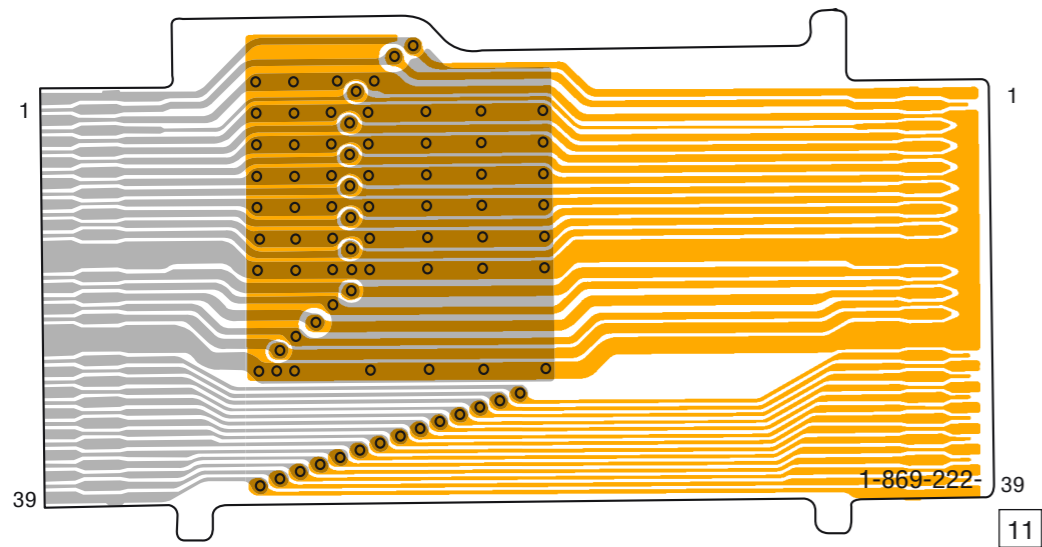


Note: D001 (AF LED) is not supplied, but this is included in AF-105 flexible board complete.

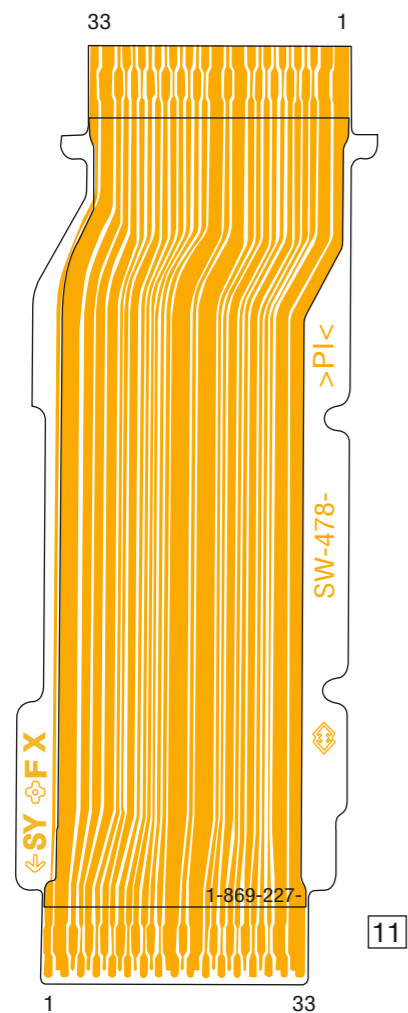
JK-306 FLEXIBLE BOARD



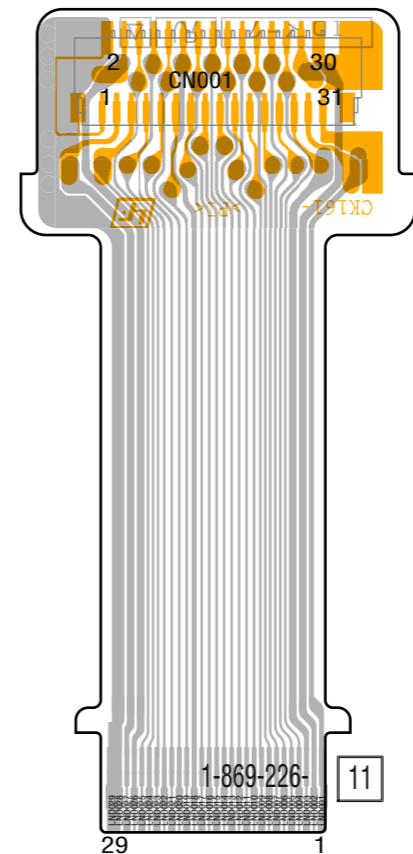
CD-621 FLEXIBLE BOARD



SW-478 FLEXIBLE BOARD



CK-161 FLEXIBLE BOARD



Printed wiring board of the SY-150 board and CH-199 board are not shown.
Pages from 4-29 to 4-31 are not shown.

4-3. PRINTED WIRING BOARDS

4-4. MOUNTED PARTS LOCATION

no mark : side A

* mark : side B

CD-617 BOARD

* C001 B-2
 * C002 B-1
 * C003 B-1
 * C004 B-1
 * C005 B-1
 * C006 B-2
 * C007 B-1
 * C008 B-2
 * C009 B-2

 * CL001 B-3
 * CL002 B-3
 * CL003 B-3
 * CL006 B-3
 * CL007 B-3
 * CL008 B-3

 * CN001 B-1

 * IC001 B-1
 IC002 B-2

 * Q001 B-2

 * R001 B-2
 * R002 B-2
 * R003 B-2
 * R004 B-2
 * R007 B-2
 * R009 B-2
 * R010 B-2
 * R011 B-1

SW-471 BOARD

* CN401 C-5
 CN402 B-2

 D401 B-6
 * D402 B-6
 * D403 B-5

 * LND401 B-6

 * R401 B-5
 * R402 B-5
 * R403 B-5
 R404 A-2
 R405 B-2

 * RB401 B-5
 RB402 B-2

 S401 A-4
 S402 C-5
 S403 B-5
 S404 B-3
 S405 B-4
 S406 C-4
 S407 B-1
 S408 B-2
 S409 C-1
 S410 B-3

ST-142 BOARD

C101 A-2
 C102 A-2
 C103 A-2
 C104 B-2
 * C105 B-3
 C106 B-3

 CL101 A-2

 CN101 B-3

 D101 B-2
 D102 B-3

 IC101 B-3

 L101 A-1

 LND101 A-1
 LND102 A-2
 LND103 A-1

 Q101 B-1

 R102 B-3
 R103 B-2
 R104 B-2

 T101 A-3

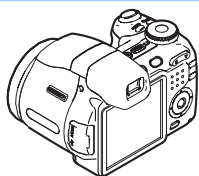
Mounted parts location of the SY-150 board is not shown.
 Page 4-33 is not shown.

5. REPAIR PARTS LIST

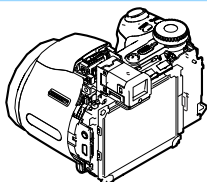
NOTE: Characters **A** to **Z** of the electrical parts list indicate location of exploded views in which the desired part is shown.

Link

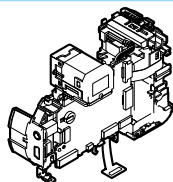
EXPLODED VIEWS



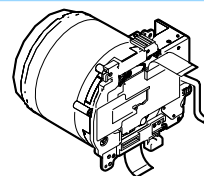
OVERALL SECTION



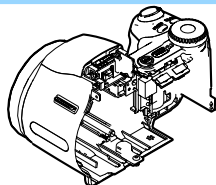
LCD SECTION



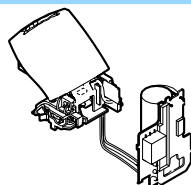
MAIN SECTION



LENS SECTION



CABINET (FRONT) SECTION



ST SECTION

Link

ELECTRICAL PARTS LIST

ACCESSORIES

• AF-105 FLEXIBLE BOARD A	• MS-305 BOARD B	• ST-144 BOARD C
• CD-617 BOARD D	• PL-045 BOARD E	• SW-471 BOARD F
• CK-161 FLEXIBLE BOARD G	• ST-142 BOARD H	• SY-150 BOARD I
• JK-306 FLEXIBLE BOARD J		

5. REPAIR PARTS LIST

5. REPAIR PARTS LIST

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- **CAPACITORS:**
 uF: μ F
 COILS
 uH: μ H
- **RESISTORS**
 All resistors are in ohms.
 METAL: metal-film resistor
 METAL OXIDE: Metal Oxide-film resistor
 F: nonflammable
- **SEMICONDUCTORS**
 In each case, u: μ , for example:
 uA...: μ A..., uPA..., μ PA...,
 uPB..., μ PB..., uPC..., μ PC...,
 uPD..., μ PD...

When indicating parts by reference number, please include the board name.

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Language that can be selected about SY-150 board

	Area	Japanese	English	French	German	Spanish	Italian	Portugal	Simplified Chinese	Traditional Chinese	Arabic	Dutch	Russian	Swedish	Korean	Norwegian	Danish	Finnish	Polish	Hungarian	Czech	Persian	Thai
GP1	J	●																					
GP2	US CND AUS Vietnam		●	●		●	●		●	●													
GP3	AEP UK		●	●	●	●	●	●				●	●	●		●	●	●	●	●	●		
GP4	E JE HK CH KR BR		●			●		●	●	●	●				●							●	●

• Abbreviation

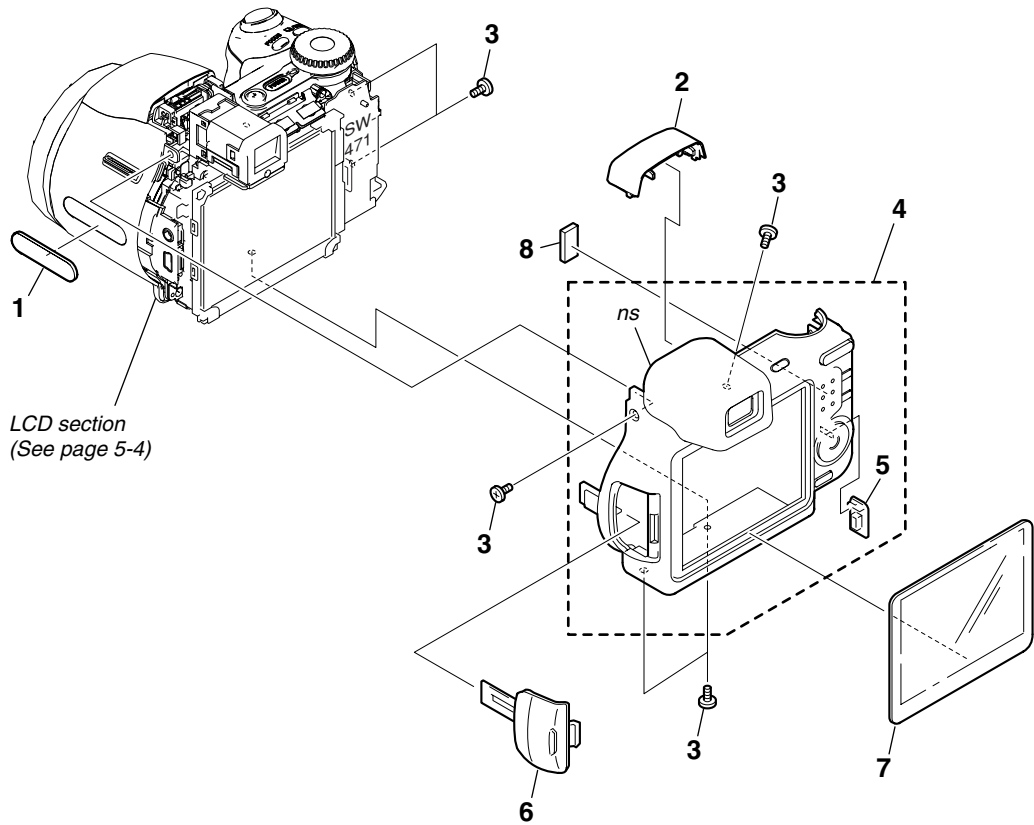
J : Japanese model
 CND : Canadian model
 AUS : Australian model
 JE : Tourist model
 HK : Hong Kong model
 CH : Chinese model
 KR : Korea model
 BR : Brazilian model

5. REPAIR PARTS LIST

5-1. EXPLODED VIEWS

5-1-1. OVERALL SECTION

ns : not supplied

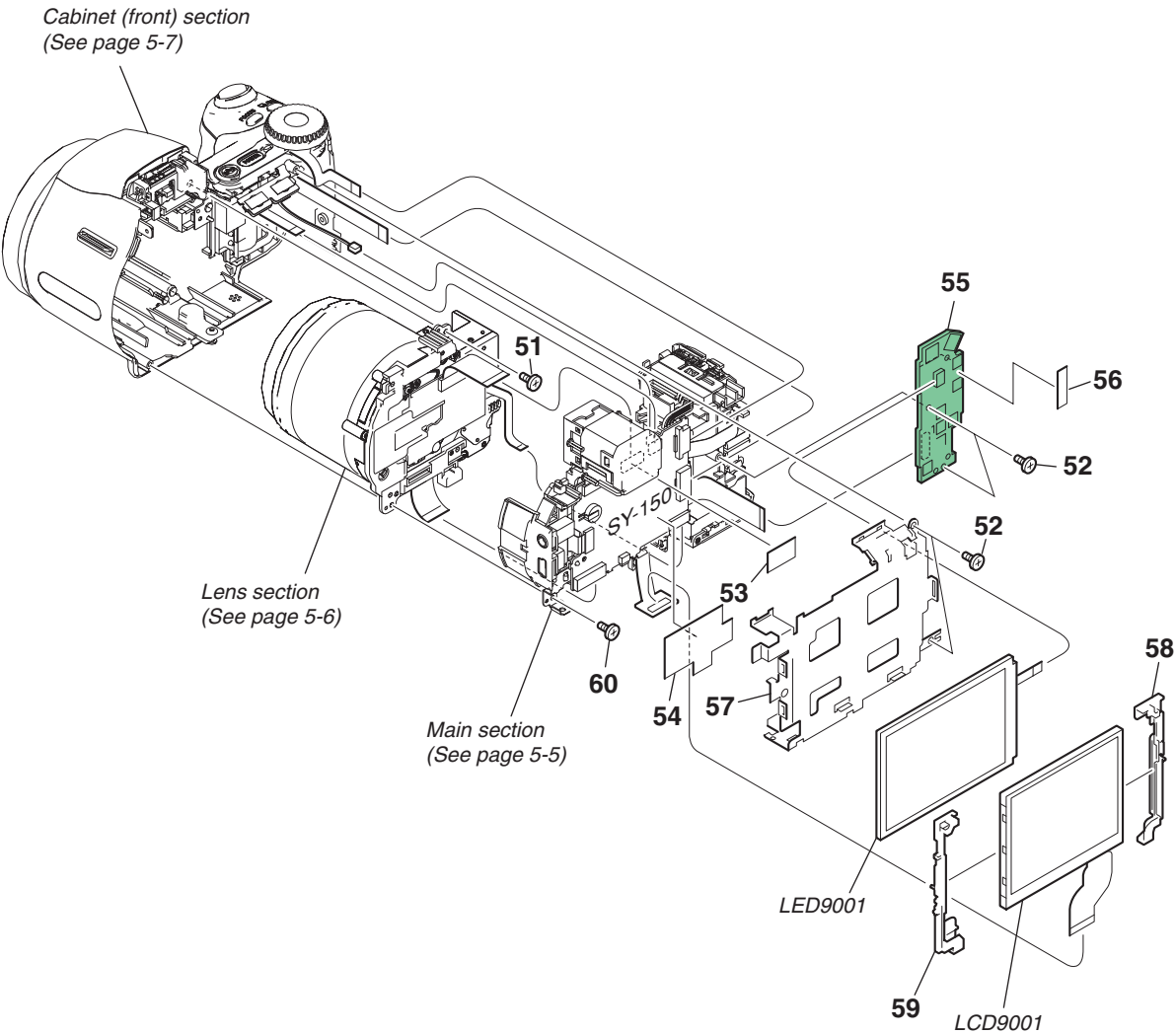


Ref. No.	Part No.	Description
1	2-673-346-01	PLATE, ORNAMENTAL
2	2-673-327-11	CABINET (UPPER) (SILVER)
2	2-673-327-21	CABINET (UPPER) (BLACK)
3	2-630-005-31	SCREW (M2), NEW TRUSTER, P2 (BLACK)
3	2-655-582-11	SCREW 0+P2 M2 NEWTRU-STAR (SILVER)
4	X-2108-909-1	CABINET (REAR) ASSY (420) (SILVER)
4	X-2109-111-1	CABINET (REAR) ASSY (420D) (BLACK)

Ref. No.	Part No.	Description
5	2-673-247-01	LID, DC (SILVER)
5	2-673-247-11	LID, DC (BLACK)
6	2-673-303-01	LID, JK (SILVER)
6	2-673-303-11	LID, JK (BLACK)
7	2-673-345-01	WINDOW (420), LCD
* 8	2-685-484-01	CUSHION (REAR)

5. REPAIR PARTS LIST

5-1-2. LCD SECTION



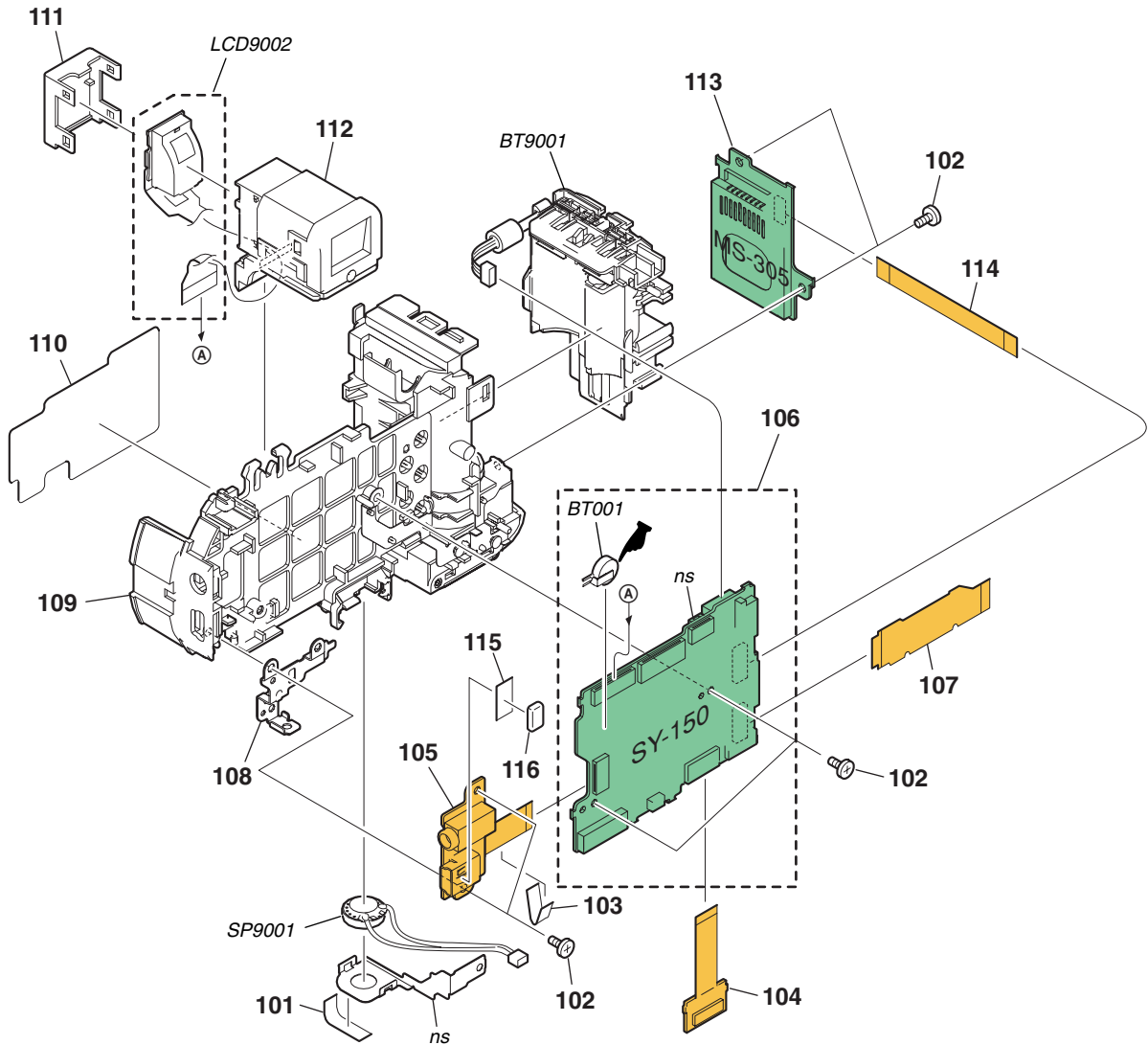
Ref. No.	Part No.	Description
51	2-666-551-21	SCREW, TAPPING, P2
52	3-078-890-01	SCREW, TAPPING
* 53	2-694-714-01	TAPE CD RETAINER (420)
* 54	2-673-339-03	LABEL, FUSE REPLACEMENT CAUTION
55	A-1176-922-A	SW-471 BOARD, COMPLETE
* 56	2-678-099-01	SHEET, SW MUFFLE


Ref. No.	Part No.	Description
* 57	2-673-342-01	FRAME (420), LCD
* 58	2-673-344-01	HOLDER (R), LCD
* 59	2-673-343-01	HOLDER (L), LCD
60	2-666-551-21	SCREW, TAPPING, P2
LCD9001	8-753-256-97	ACX541AKA-1
LED9001	1-479-403-11	BLOCK, LIGHT GUIDE PLATE (3.0)

5. REPAIR PARTS LIST

5-1-3. MAIN SECTION

ns : not supplied



 : BT001 (Lithium battery) SY-150 board on the mount position. (See page 4-29)

Ref. No.	Part No.	Description
* 101	2-684-446-01	SPACER, SP
102	3-080-204-11	SCREW, TAPPING, P2
* 103	2-672-564-01	SHEET (JK), RADIATION
104	A-1176-978-A	CK-161 FLEXIBLE BOARD, COMPLETE
105	A-1176-915-A	JK-306 FLEXIBLE BOARD, COMPLETE
106	A-1176-925-A	SY-150 BOARD, COMPLETE (SERVICE) (GP1)
106	A-1176-926-A	SY-150 BOARD, COMPLETE (SERVICE) (GP2)
106	A-1176-927-A	SY-150 BOARD, COMPLETE (SERVICE) (GP3)
106	A-1176-928-A	SY-150 BOARD, COMPLETE (SERVICE) (GP4)
107	1-869-227-11	SW-478 FLEXIBLE BOARD
* 108	2-673-306-01	PLATE, JK GROUND
109	X-2108-910-1	HOLDER ASSY, BATTERY (SILVER)
109	X-2109-112-1	HOLDER (420D), BATTERY (BLACK)

Ref. No.	Part No.	Description
* 110	2-677-004-01	SHEET (INR), RADIATION
* 111	2-673-337-01	RETAINER, MODULE
112	X-2108-913-1	ASSY, VF
113	A-1176-924-A	MS-305 BOARD, COMPLETE
114	1-831-557-11	FLEXIBLE FLAT CABLE (MS-030)
* 115	2-694-712-01	USB PROTECTION SHEET
* 116	2-694-713-01	USB GASKET
△ BT001	1-756-539-21	BATTERY, LITHIUM SECONDARY
* BT9001	1-780-338-11	TERMINAL BOARD, BATTERY (SILVER)
* BT9001	1-780-338-21	TERMINAL BOARD, BATTERY (BLACK)
LCD9002	1-802-033-11	LCD MODULE
SP9001	1-826-403-21	LOUDSPEAKER (1.0CM)

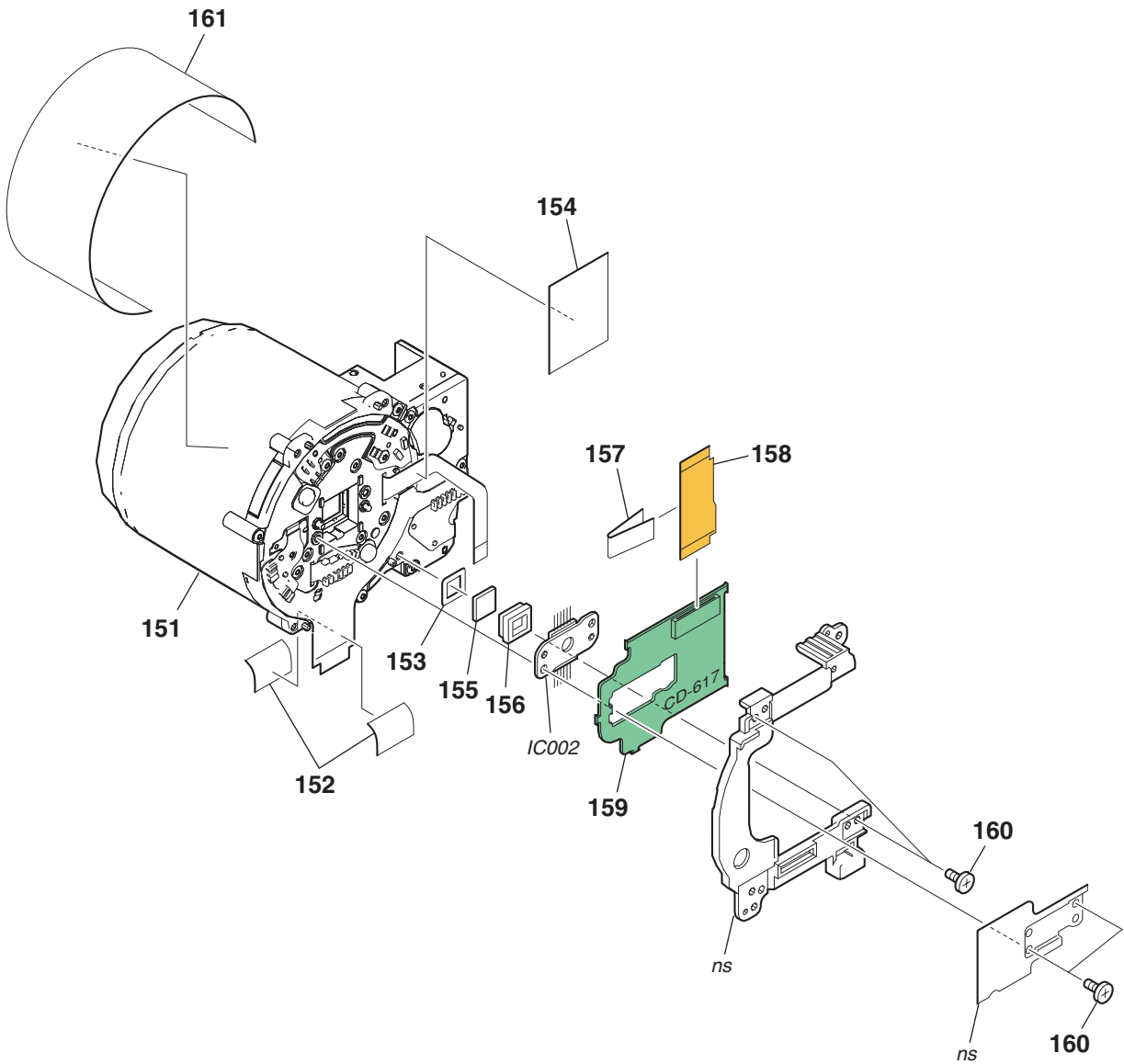
CAUTION :

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

5. REPAIR PARTS LIST

5-1-4. LENS SECTION

ns : not supplied



Ref. No.	Part No.	Description
151	A-1177-128-A	SERVICE, OPTICS UNIT (B191A) (SERVICE)
* 152	2-672-563-01	SHEET (LNS), RADIATION
153	2-592-693-01	PLATE (T), LIGHT INTERCEPTION
* 154	2-672-565-01	SHEET (TB), RADIATION
155	1-788-338-11	OPTICAL FILTER BLOCK
156	2-592-605-01	RUBBER (TM), SEAL
* 157	2-672-562-01	SHEET (CD), RADIATION

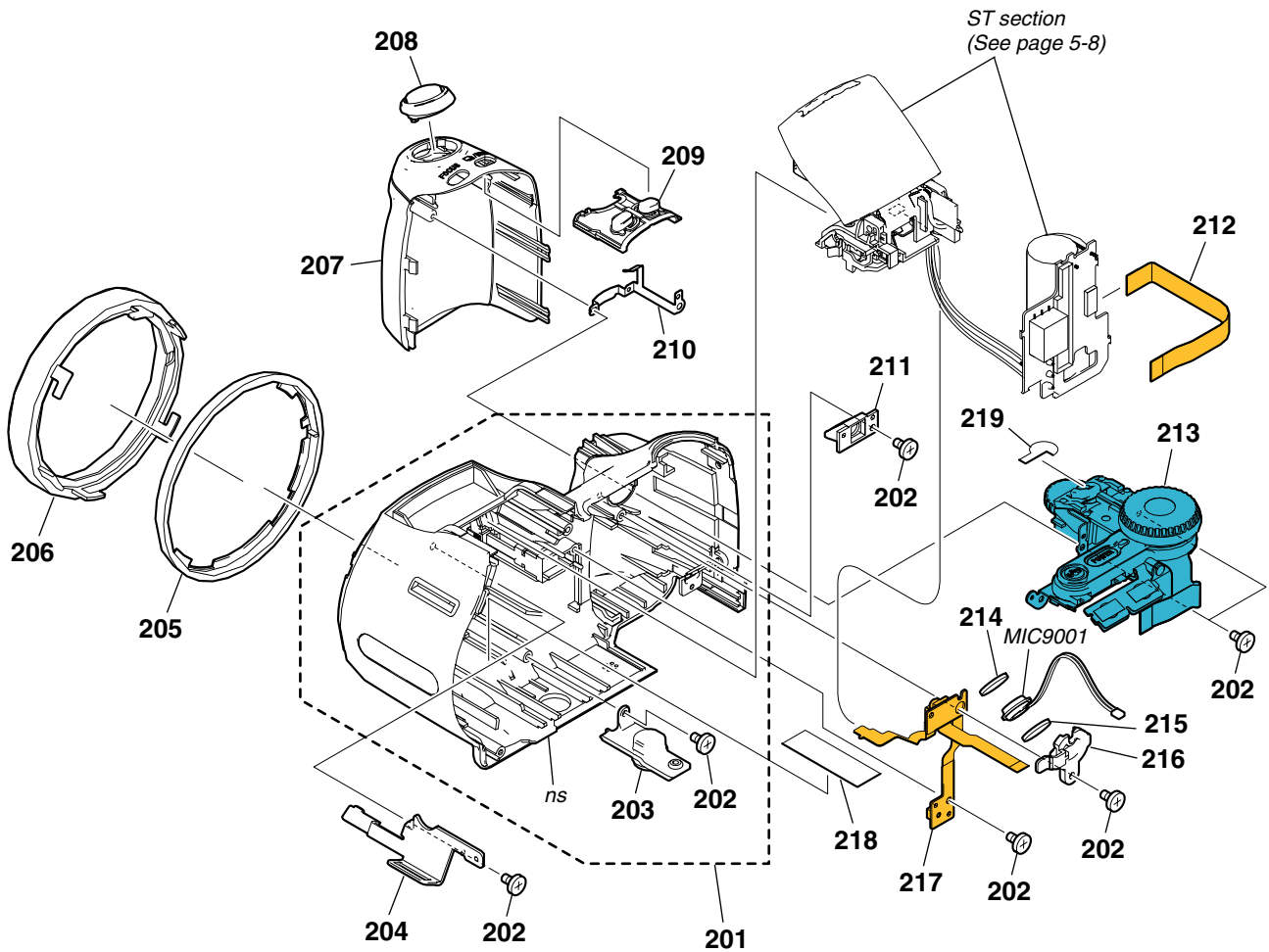
Ref. No.	Part No.	Description
158	1-869-222-11	CD-621 FLEXIBLE BOARD
159	A-1176-923-A	CD-617 BOARD, COMPLETE (IC002 is not included in this COMPLETE board.)
160	2-666-551-21	SCREW, TAPPING, P2
* 161	2-689-504-01	SHEET (LNS 2), RADIATION
IC002	A-1176-035-A	CCD BLOCK ASSY (CCD IMAGER) (IC002 is not included in this COMPLETE board of CD-617.)

Be sure to read "Precautions upon replacing CCD imager" on page 4-3 when changing the CCD imager.

5. REPAIR PARTS LIST

5-1-5. CABINET (FRONT) SECTION

ns : not supplied



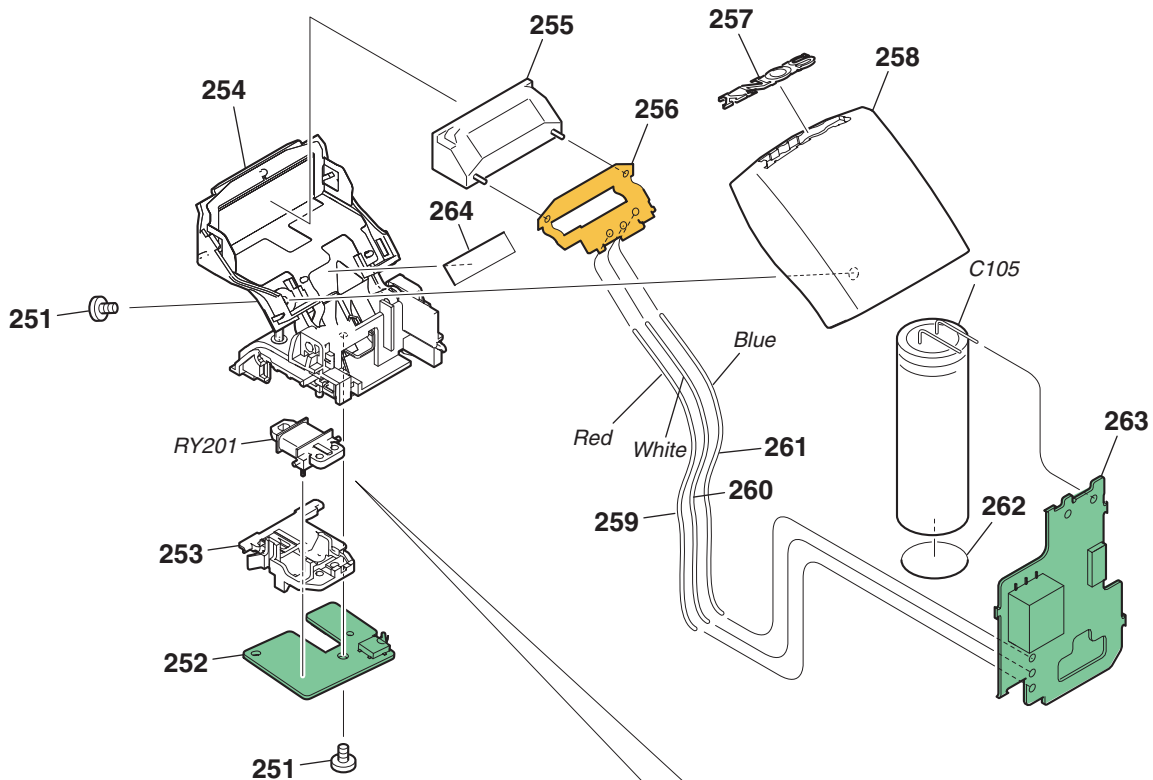
Ref. No.	Part No.	Description
201	X-2108-907-1	CABINET (FRONT) ASSY (420) (SILVER)
201	X-2109-110-1	CABINET (FRONT) ASSY (420D) (BLACK)
202	3-080-204-11	SCREW, TAPPING, P2
203	2-673-230-01	SCREW, TRIPOD
* 204	2-673-328-01	SHEET METAL (R), STRAP
205	2-673-324-11	RING, ORNAMENTAL
206	2-673-323-11	RING, LENS
207	2-673-325-11	GRIP (SILVER)
207	2-673-325-21	GRIP (BLACK)
208	X-2108-326-1	RELEASE ASSY (420)
209	2-673-301-11	BUTTON, FB

Ref. No.	Part No.	Description
* 210	2-673-305-01	PLATE, GRIP GROUND
* 211	2-673-302-01	HOLDER, AF
212	1-831-558-11	FLEXIBLE FLAT CABLE (ST-003)
213	1-479-699-21	SWITCH BLOCK, CONTROL
* 214	2-673-335-01	CUSHION, MICROPHONE
* 215	2-678-097-01	CUSHION (B), MICROPHONE
* 216	2-673-334-01	HOLDER, MICROPHONE
217	A-1176-913-A	AF-105 FLEXIBLE BOARD, COMPLETE
* 218	2-689-505-01	SHEET (TRIPOD), RADIATION
219	2-695-940-01	SPACER, RELEASE
MIC9001	1-542-618-21	MICROPHONE

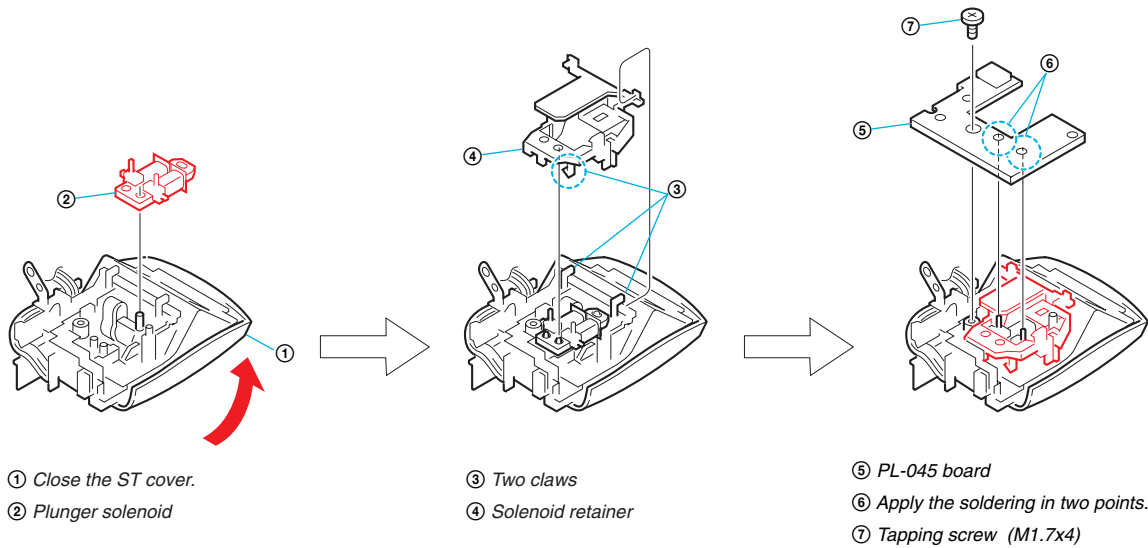
5. REPAIR PARTS LIST

5-1-6. ST SECTION

ns : not supplied



PRECAUTION DURING SOLENOID PLUNGER INSTALLATION



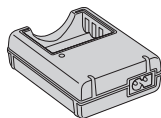
Ref. No.	Part No.	Description
251	3-080-204-11	SCREW, TAPPING, P2
252	A-1176-908-A	PL-045 BOARD, COMPLETE
253	2-629-818-01	RETAINER, SOLENOID
254	X-2108-912-1	BASE ASSY, ST
△ 255	1-479-553-11	FLASH UNIT
256	A-1176-914-A	ST-144 BOARD, COMPLETE
257	2-673-341-01	EMBLEM (320), ST (SILVER)
257	2-673-341-11	EMBLEM (320), ST (BLACK)
258	2-673-326-01	COVER, ST (SILVER)

Ref. No.	Part No.	Description
258	2-673-326-11	COVER, ST (BLACK)
259	1-964-411-11	HARNESS (HA-004) (Red)
260	1-964-411-21	HARNESS (HA-004) (White)
261	1-964-411-31	HARNESS (HA-004) (Blue)
* 262	2-678-098-01	SHEET, ST ELECTROSTATIC
263	A-1176-909-A	ST-142 BOARD, COMPLETE
* 264	2-678-099-01	SHEET, SW MUFFLE
△ C105	1-112-763-11	CAP, ELECT 320uF 330V
RY201	1-455-038-11	SOLENOID, PLUNGER

5. REPAIR PARTS LIST

Checking supplied accessories.

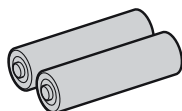
Make sure that the following accessories are supplied with your camcorder.



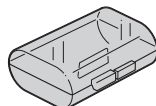
△ Ni-MH battery charger BC-CS2A/CS2B (1)
(US,CND,JE,J model)
1-479-378-11
△ Ni-MH battery charger BC-CS2A/CS2B (1)
(AEP,UK,E,AUS,HK model)
1-479-378-21
△ Ni-MH battery charger BC-CS2A/CS2B (1)
(KR,CH model)
1-479-378-31



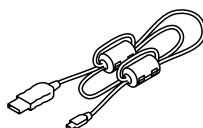
△ Power cord (Mains lead) (1)
(US,CND model)
1-790-107-51
△ Power cord (Mains lead) (1)
(AEP,E model)
1-824-910-31
△ Power cord (Mains lead) (1)
(AUS model)
1-827-945-41
△ Power cord (Mains lead) (1)
(KR model)
1-823-947-51
△ Power cord (Mains lead) (1)
(UK model)
1-827-269-22
△ Power cord (Mains lead) (1)
(HK model)
1-783-374-22
△ Power cord (Mains lead) (1)
(CH model)
1-782-476-41
△ Power cord (Mains lead) (1)
(JE, J model)
1-792-549-31



HR6 (size AA) Nickel-Metal
Hydride batteries (2)
(not supplied)



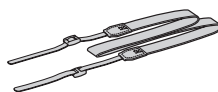
Battery case (1)
3-074-757-01



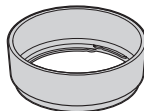
USB cable (1)
1-829-868-41



AV cable (1)
1-824-519-11



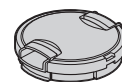
Shoulder strap (1)
2-629-892-01



Lens hood (1)
2-629-860-01



Adaptor ring (1)
2-629-861-01



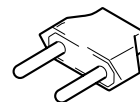
Lens cap (1)
X-2055-960-1



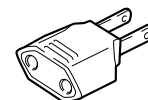
Lens cap strap (1)
3-979-194-31



CD-ROM
(Cyber-shot application software) (1)
(Except BR model)
2-666-673-03



2-pin conversion adaptor (1)
(JE model)
1-569-007-12



2-pin conversion adaptor (1)
(E model)
1-569-008-12

Other accessories

2-673-174-01 INSTRUCTION (READ THIS FIRST) (JAPANESE)(J)
2-673-174-11 INSTRUCTION (READ THIS FIRST) (ENGLISH)
(US,CND,AEP,UK,E,AUS,HK,JE)
2-673-174-21 INSTRUCTION (READ THIS FIRST) (FRENCH/ITALIAN)
(CND,AEP)
2-673-174-31 INSTRUCTION (READ THIS FIRST)
(SPANISH/PORTUGUESE)(AEP,E,JE)
2-673-174-41 INSTRUCTION (READ THIS FIRST) (GERMAN/DUTCH)
(AEP)
2-673-174-51 INSTRUCTION (READ THIS FIRST)
(SIMPLIFIED CHINESE/TRADITIONAL CHINESE)
(E,HK,CH,JE)
2-673-174-61 INSTRUCTION (READ THIS FIRST) (RUSSIAN)(AEP)
2-673-174-71 INSTRUCTION (READ THIS FIRST) (ARABIC/PERSIAN)(E)
2-673-174-81 INSTRUCTION (READ THIS FIRST) (KOREAN)(KR,JE)
2-673-174-91 INSTRUCTION (READ THIS FIRST) (CZECH/POLISH)
(AEP)
2-673-175-11 INSTRUCTION (READ THIS FIRST)
(HUNGARIAN/SLOVAK)(AEP)
2-673-175-21 INSTRUCTION (READ THIS FIRST) (SWEDISH/FINNISH)
(AEP)

2-673-175-31 INSTRUCTION (READ THIS FIRST)
(NORWEGIAN/DANISH)(AEP)
2-673-176-01 INSTRUCTION (USER'S GUIDE) (JAPANESE)(J)
2-673-176-11 INSTRUCTION (USER'S GUIDE) (ENGLISH)
(US,CND,AEP,UK,E,AUS,HK,JE)
2-673-176-21 INSTRUCTION (USER'S GUIDE) (FRENCH/ITALIAN)
(CND,AEP)
2-673-176-31 INSTRUCTION (USER'S GUIDE)
(SPANISH/PORTUGUESE)(AEP,E,JE)
2-673-176-41 INSTRUCTION (USER'S GUIDE) (GERMAN/DUTCH)(AEP)
2-673-176-51 INSTRUCTION (USER'S GUIDE) (SIMPLIFIED CHINESE/
TRADITIONAL CHINESE)(E,HK,CH,JE)
2-673-176-61 INSTRUCTION (USER'S GUIDE) (RUSSIAN)(AEP)
2-673-176-71 INSTRUCTION (USER'S GUIDE) (ARABIC/PERSIAN)(E)
2-673-176-81 INSTRUCTION (USER'S GUIDE) (KOREAN)(KR,JE)
2-673-176-91 INSTRUCTION (USER'S GUIDE) (POLISH/CZECH)(AEP)
2-673-177-11 INSTRUCTION (USER'S GUIDE) (HUNGARIAN/SLOVAK)
(AEP)
2-673-177-21 INSTRUCTION (USER'S GUIDE) (SWEDISH/FINNISH)
(AEP)
2-673-177-31 INSTRUCTION (USER'S GUIDE) (NORWEGIAN/DANISH)
(AEP)

5-2. ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description
	A-1176-913-A	AF-105 FLEXIBLE BOARD, COMPLETE ***** (D001 (AF LED) is not supplied, but this is included in AF-105 flexible board complete.) < DIODE >
D001	Not supplied	DIODE DOR5073 (AF LED) (D001 (AF LED) is not supplied, but this is included in AF-105 flexible board complete.) < SWITCH >
S001	1-762-805-21	SWITCH, PUSH (1 KEY)(LENS COVER OPEN)
	A-1176-923-A	CD-617 BOARD, COMPLETE ***** (IC002 is not included in this COMPLETE board.) < CAPACITOR >
C002	1-100-566-91	CERAMIC CHIP 0.1uF 10% 25V
C004	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C005	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C006	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C007	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C009	1-100-566-91	CERAMIC CHIP 0.1uF 10% 25V
		< CONNECTOR >
* CN001	1-816-057-51	CONNECTOR, FPC (ZIF) 39P < IC >
IC001	8-753-230-85	IC CXA3691EN-T9
IC002	A-1176-035-A	CCD BLOCK ASSY (CCD IMAGER) (IC002 is not included in this COMPLETE of CD-617 board.) < TRANSISTOR >
Q001	6-550-119-01	TRANSISTOR DTC144EMT2L < RESISTOR >
R001	1-218-990-81	SHORT CHIP 0
R002	1-218-990-81	SHORT CHIP 0
R003	1-218-982-11	RES-CHIP 270K 5% 1/16W
R004	1-218-989-11	RES-CHIP 1M 5% 1/16W
R007	1-218-979-11	RES-CHIP 150K 5% 1/16W
R010	1-218-977-11	RES-CHIP 100K 5% 1/16W
R011	1-218-990-81	SHORT CHIP 0
	A-1176-978-A	CK-161 FLEXIBLE BOARD, COMPLETE ***** < CONNECTOR >
* CN001	1-817-391-51	CONNECTOR, FPC (ZIF) 31P

Ref. No.	Part No.	Description
	A-1176-915-A	JK-306 FLEXIBLE BOARD, COMPLETE ***** < CONNECTOR >
CN001	1-794-962-11	CONNECTOR, SQUARE TYPE (USB 5P) < JACK >
J001	1-793-620-41	JACK (A/V OUT)
	A-1176-924-A	MS-305 BOARD, COMPLETE ***** < CAPACITOR >
C301	1-100-786-91	TANTAL. CHIP 22uF 20% 6.3V
C302	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
		< CONNECTOR >
* CN301	1-816-644-51	FFC/FPC CONNECTOR (LIF) 12P
CN302	1-817-827-11	MEMORY STICK DUO CONNECTOR < FERRITE BEAD >
FB301	1-469-581-21	INDUCTOR, FERRITE BEAD (1005)
FB302	1-469-581-21	INDUCTOR, FERRITE BEAD (1005)
FB303	1-469-581-21	INDUCTOR, FERRITE BEAD (1005)
FB304	1-469-581-21	INDUCTOR, FERRITE BEAD (1005)
FB305	1-218-990-81	SHORT CHIP 0 (Note1)
FB306	1-218-990-81	SHORT CHIP 0 (Note1) < RESISTOR >
R302	1-218-953-11	RES-CHIP 1K 5% 1/16W
R303	1-218-940-11	RES-CHIP 82 5% 1/16W
R304	1-218-940-11	RES-CHIP 82 5% 1/16W
	A-1176-908-A	PL-045 BOARD, COMPLETE ***** (RY201 is not included in this COMPLETE board.) < CAPACITOR >
C201	1-165-908-11	CERAMIC CHIP 1uF 10% 10V < CONNECTOR >
* CN201	1-816-654-51	FFC/FPC CONNECTOR (LIF) 6P < DIODE >
D202	8-719-988-61	DIODE 1SS355TE-17
D203	6-500-776-01	DIODE MAZW068H0LS0 < RELAY >
RY201	1-455-038-11	SOLENOID, PLUNGER (RY201 is not included in this COMPLETE of PL-045 board.)

Be sure to read "Precautions upon replacing CCD imager"
on page 4-3 when changing the CCD imager.

Note 1:
Resistor is mounted to the location where FB305
and FB306 are printed.

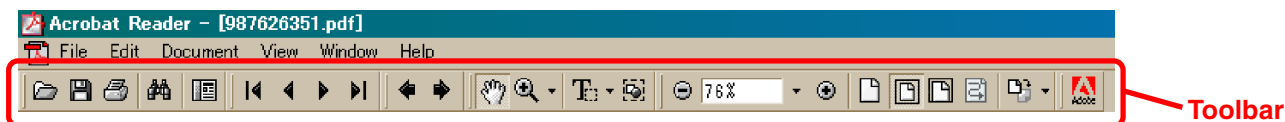
Ref. No.	Part No.	Description
		< SWITCH >
S201	1-786-179-31	SWITCH, PUSH (1KEY)(FLASH POP UP)
A-1176-909-A ST-142 BOARD, COMPLETE ***** (C105 is not included in this COMPLETE board.)		
		< CAPACITOR >
C101	1-100-611-91	CERAMIC CHIP 22uF 20% 6.3V
C102	1-100-611-91	CERAMIC CHIP 22uF 20% 6.3V
C103	1-165-908-11	CERAMIC CHIP 1uF 10% 10V
△ C105	1-112-763-11	CAP, ELECT 320uF 330V (C105 is not included in this COMPLETE of ST-142 board.)
C106	1-100-611-91	CERAMIC CHIP 22uF 20% 6.3V
		< CONNECTOR >
* CN101	1-816-644-51	FFC/FPC CONNECTOR (LIF) 12P
		< DIODE >
D101	8-719-056-54	DIODE MAZS068008SO
△ D102	6-501-096-01	DIODE CRF02 (TE85R)
		< IC >
IC101	6-707-555-01	IC TPS65552RGTR
		< COIL >
L101	1-456-995-22	INDUCTOR 4.7uH
		< TRANSISTOR >
Q101	6-550-891-01	TRANSISTOR GT8G133 (T2LSONY.Q)
		< RESISTOR >
R103	1-243-975-11	METAL CHIP 4.7M 5% 1/16W
R104	1-218-935-11	RES-CHIP 33 5% 1/16W
		< TRANSFORMER >
△ T101	1-443-850-21	DC-DC CONVERTER TRANSFORMER,
A-1176-914-A ST-144 BOARD, COMPLETE *****		
		< CAPACITOR >
C002	1-100-758-11	CERAMIC CHIP 0.047uF 10% 250V
C003	1-100-761-21	CERAMIC CHIP 0.01uF 10% 250V
		< DIODE >
D001	6-500-811-01	DIODE RR255L-400TE25
		< COIL >
L001	1-456-193-11	COIL, TRIGGER

Ref. No.	Part No.	Description
		< RESISTOR >
R001	1-216-121-11	RES-CHIP 1M 5% 1/10W
R002	1-216-097-11	RES-CHIP 100K 5% 1/10W
A-1176-922-A SW-471 BOARD, COMPLETE *****		
		< CONNECTOR >
* CN401	1-815-333-51	CONNECTOR, FPC (ZIF) 33P
* CN402	1-816-654-51	FFC/FPC CONNECTOR (LIF) 6P
		< DIODE >
D401	8-719-064-07	DIODE SML-310LTT86 (ACCESS)
D402	6-500-776-01	DIODE MAZW068H0LS0
D403	8-719-056-23	DIODE MA2S111-(K8).SO
		< RESISTOR >
R401	1-208-671-11	METAL CHIP 330 0.5% 1/16W
R402	1-218-970-11	RES-CHIP 27K 5% 1/16W
R403	1-218-962-11	RES-CHIP 5.6K 5% 1/16W
R404	1-218-970-11	RES-CHIP 27K 5% 1/16W
R405	1-218-962-11	RES-CHIP 5.6K 5% 1/16W
		< COMPOSITION CIRCUIT BLOCK >
RB401	1-234-376-11	RES, NETWORK 2.2K (1005X4)
RB402	1-234-376-11	RES, NETWORK 2.2K (1005X4)
		< SWITCH >
S401	1-786-157-11	SWITCH, TACTILE (RIGHT)
S402	1-786-157-31	TACTILE SWITCH (DUST)
S403	1-786-157-11	SWITCH, TACTILE (DOWN)
S404	1-786-157-11	SWITCH, TACTILE (UP)
S405	1-786-157-11	SWITCH, TACTILE (SET)
S406	1-786-157-11	SWITCH, TACTILE (LEFT)
S407	1-786-525-31	TACTILE SWITCH (ZOOM T)
S408	1-786-157-11	SWITCH, TACTILE (DISP)
S409	1-786-525-31	TACTILE SWITCH (ZOOM W)
S410	1-786-157-11	SWITCH, TACTILE (MENU)


SY-150 BOARD, COMPLETE

Electrical parts list of the SY-150 board is not shown.
Pages from 5-12 to 5-15 are not shown.


[Description of main button functions on toolbar of the Adobe Acrobat Reader Ver5.0 (for Windows)]





Printing a text

1. Click the Print button .
2. Specify a printer, print range, number of copies, and other options, and then click [OK].

Application of printing:

To set a range to be printed within a page, select the graphic selection tool  and drag on the page to enclose a range to be printed, and then click the Print button.


Reversing the screens displayed once

- To reverse the previous screens (operation) one by one, click the .
- To advance the reversed screens (operation) one by one, click the .

Application to the Service Manual:

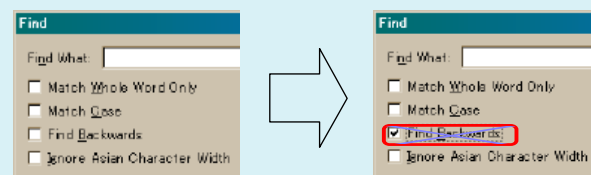
This function allows you to go and back between circuit diagram and printed circuit board diagram, and accordingly it will be convenient for the voltage check.

Finding a text

1. Click the Find button .
2. Enter a character string to be found into a text box, and click the [Find]. (Specify the find options as necessary)

Application to the Service Manual:

To execute "find" from current page toward the previous pages, select the check box "Find Backwards" and then click the "Find".








3. Open the find dialog box again, and click the [Find Again] and you can find the matched character strings displayed next. (Character strings entered previously are displayed as they are in the text box.)

Application to the Service Manual:


The parts on the drawing pages (block diagrams, circuit diagrams, printed circuit boards) and parts list pages in a text can be found using this find function. For example, find a Ref. No. of IC on the block diagram, and click the [Find Again] continuously, so that you can move to the Ref. No. of IC on the circuit diagram or printed circuit board diagram successively.


Note: The find function may not be applied to the Service Manual depending on the date of issue.

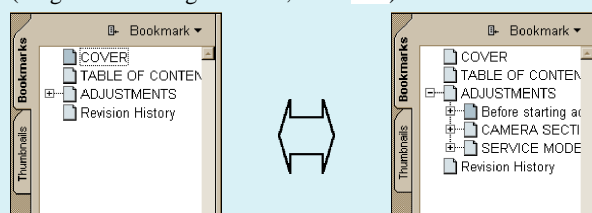
Moving with link

1. Select either palm tool , zoom tool , text selection tool , or graphic selection tool .
2. Place the pointer in the position in a text where the link exists (such as a button on cover and the table of contents page, or blue characters on the removal flowchart page or drawing page), and the pointer will change to the forefinger form .
3. Then, click the link. (You will go to the link destination.)

Moving with bookmark:



Click an item (text) on the bookmark pallet. and you can move to the link destination. Also, clicking  can display the hidden items.

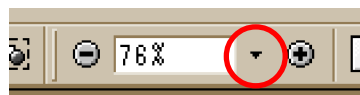
(To go back to original state, click )




Zooming or rotating the screen display

"Zoom in/out"

- Click the triangle button in the zoom control box to select the display magnification. Or, you may click  or  for zooming in or out.







"Rotate"

- Click rotate tool , and the page then rotates 90 degrees each.

Application to the Service Manual:

The printed circuit board diagram you see now can be changed to the same direction as the set.

Switching a page

- To move to the first page, click the .
- To move to the last page, click the .
- To move to the previous page, click the .
- To move to the next page, click the .

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2006.04	Official Release	—	—
1.1	2006.06	Correction-1	<ul style="list-style-type: none">• Correction of service note• Correction of block diagrams• Correction of schematic diagrams• Correction of printed wiring boards• Correction of electrical parts list S.M. correction: Page 1-3E , 3-1 , 3-2 , 3-4E , 4-11 , 4-27 , 5-10	Yes

DSC-H5

SONY®

SERVICE MANUAL

Ver. 1.1 2006. 06

LEVEL 2

*US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
Chinese Model
Brazilian Model
Hong Kong Model
Korea Model
Tourist Model
Japanese Model*

CORRECTION-1

Correct your service manual as shown below.


- Correction of service note
- Correction of block diagrams
- Correction of schematic diagrams
- Correction of printed wiring boards
- Correction of electrical parts list

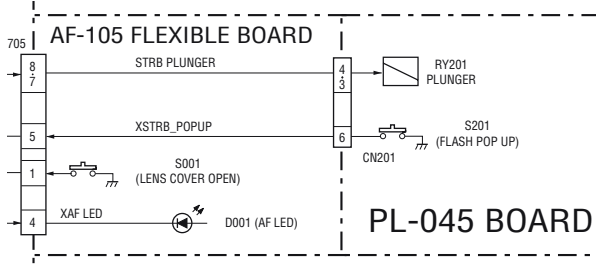
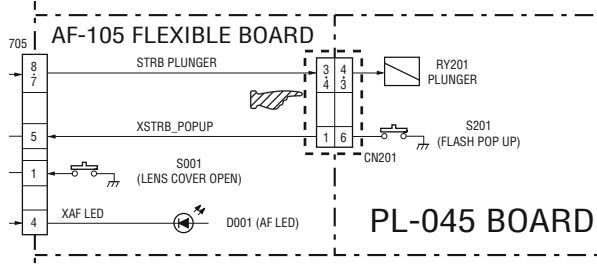
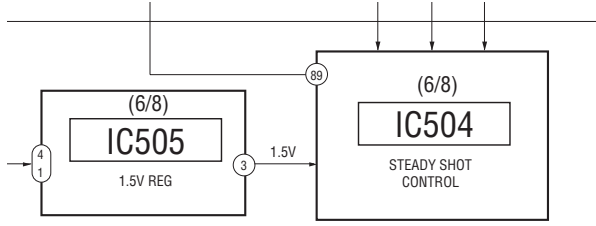
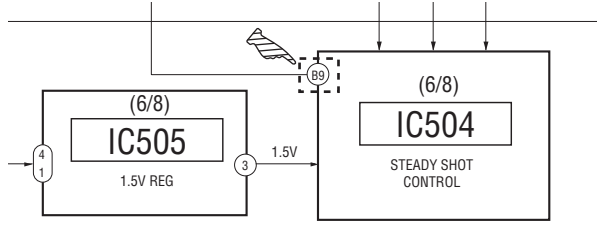
1-5. INITIAL LANGUAGE DATA CHECK



3. BLOCK DIAGRAMS


7


 : Corrected portion

Page	INCORRECT	CORRECT
3-2	3-2. OVERALL BLOCK DIAGRAM (2/2) 	
3-4E	3-4. POWER BLOCK DIAGRAM (2/2) 	


4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS





4-2. SCHEMATIC DIAGRAMS

 : Corrected portion

Page	INCORRECT	CORRECT
4-11	AF-105 FLEXIBLE BOARD <p>Note: D001 is not included in this COMPLETE of AF-105 board.</p>	<p>Note: D001 (AF LED) is not supplied, but this is included in AF-105 flexible board complete. </p>


4-3. PRINTED WIRING BOARDS

 : Added portion

Page	INCORRECT	CORRECT
4-27	PL-045 BOARD (SIDE A) 	<p>Note: RY201 is not included in this COMPLETE of PL-045 board. </p>
	AF-105 FLEXIBLE BOARD 	<p>Note: D001 (AF LED) is not supplied, but this is included in AF-105 flexible board complete. </p>

5. REPAIR PARTS LIST

5-2. ELECTRICAL PARTS LIST

 : Corrected portion

Page	INCORRECT			CORRECT		
5-10	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
		A-1176-913-A	AF-105 FLEXIBLE BOARD, COMPLETE ***** (D001 is not included in this COMPLETE board.)		A-1176-913-A	AF-105 FLEXIBLE BOARD, COMPLETE ***** (D001 (AF LED) is not supplied, but this is included in AF-105 flexible board complete.)
			< DIODE >			< DIODE >
	D001	Not supplied	DIODE DOR5073 (AF LED) (D001 is not included in this COMPLETE of AF-105 board.)	D001	Not supplied	DIODE DOR5073 (AF LED) (D001 (AF LED) is not supplied, but this is included in AF-105 flexible board complete.)
	Be sure to read "Precautions upon replacing CCD imager" on page 4-1 when changing the CCD imager.			Be sure to read "Precautions upon replacing CCD imager" on page 4-3 when changing the CCD imager.		

DSC-H5

Ver 1.0 2006.04

Revision History

SECTION 6 ADJUSTMENTS

Auto-ADJ

Link

• Before starting adjustments

• Adjusting items when replacing main parts and boards

• List of service tools

• SERVICE MODE

• SERVICE MODE

• CAMERA SECTION ADJUSTMENTS

• PREPARATIONS BEFORE ADJUSTMENTS

• ADJUSTMENT PROGRAMS

• VIDEO SYSTEM ADJUSTMENTS

• CAMERA SYSTEM ADJUSTMENTS

• LCD SYSTEM ADJUSTMENTS

• ERROR

• INITIALIZATION OF DATA

- Use this Service Manual together with the Automatic Adjustment Program (DSC-H5 Auto-Adj Ver1.□r□□.exe) and the AWB Adjustment Program (H5AwbAdjustment.exe).

Note: □ (numeric value) of the file name varies depending on the version of Automatic Adjustment Program.

- [Precaution on Replacing the SY-150 Board](#)

SONY®

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
6.	ADJUSTMENTS	
	Before Starting Adjustment	6-1
1-1.	Adjusting Items When Replacing Main Parts and Boards	6-4
1-2.	List of Service Tools	6-5
6-1.	Camera Section Adjustments	6-6
1-1.	Preparations Before Adjustments	6-6
1-2.	Adjustment Programs	6-10
1-3.	Video System Adjustments	6-12
1-4.	Camera System Adjustments	6-14
1-5.	LCD System Adjustments	6-25
1-6.	Error	6-27
1-7.	Initialization of Data	6-29
6-2.	Service Mode	6-30

SECTION 6 ADJUSTMENTS

Before starting adjustment

Precaution on Replacing the SY-150 Board

- The Repair Board has already been adjusted. Re-initialization or EVR data copy from the set before repair is not required.
- Perform “VIDEO OUT Default Data Check” and “Initial Language Data Check” mentioned below, and also the adjustment items necessary after SY Board replacement.

VIDEO OUT Default Data Check

When you replace to the repairing board, the written data of repairing board also might be changed to original setting because of broadcast system (NTSC/PAL).

When the data has changed because of board replacing etc., check the default data of VIDEO OUT if destination code is right. If not, rewrite to the right value.

VIDEO OUT Default Data

Page	Address	Data	
		NTSC	PAL
4F	8D	00	01

Writing Method:

- 1) Select page: 00, address: 01, and set data: 01.
- 2) Select page: 4F, address: 8D, and set data: 00 (NTSC) or data: 01 (PAL).
- 3) Select page: 40, address: 38, and set data: 00.
- 4) Click **[Save]** on the SEUS screen.
- 5) Select page: 80, address: 34, and check that the data is “00”.
- 6) Select page: 80, address: 30, and check that the data is “00”.
- 7) Select page: 00, address: 01, and set data: 00.

Initial Language Data Check

If the SY-150 board was replaced, initial language setting may be changed. Accordingly, change the following data so as to set same initial language as that of the set distributing in each region.

Initial language: Language displayed at the next starting if the setting of Setup menu was reset.

It is different from the language setting selectable with the menu.

Initial Language Data

Page	Address	Data	Language	GP1	GP2	GP3	GP4
4F	8C	00	English		●	●	●
		01	Japanese	●			
		04	Spanish			●	●
		06	Portugal				●
		08	Simplified Chinese				●
		0B	Russian			●	
		0D	Korean				●

Note: GP1 is fixed to Japanese.

GP2 is fixed to English.

GP3 is either English, Spanish, or Russian.

GP4 is either English, Spanish, Portugal, Simplified Chinese, or Korean.

Writing Method:

- 1) Select page: 00, address: 01 and set data: 01.
- 2) Select page: 4F, address: 8C, and set the Initial Language Data.
- 3) Select page: 40, address: 38, and set data: 00.
- 4) Click **[Save]** on the SEUS screen.
- 5) Select page: 80, address: 34, and check that the data is "00".
- 6) Select page: 80, address: 30, and check that the data is "00".
- 7) Select page: 00, address: 01, and set data: 00.
- 8) Turn off the camera.
- 9) Turn on the camera. Execute "Initialize" of Setup screen.
- 10) Check the language displayed when the camera starts.

Method for Copying or Erasing the Data in Internal Memory

The data can be copied/erased by the operations on the Setup screen. (When erasing the data, execute formatting the internal memory.)

Note 1: When replacing the SY-150 board, erase the data in internal memory of the board before replacement.

Note 2: When replacing the SY-150 board or the IC202 on the SY-150 board, execute formatting and initialize the internal memory after replacement.

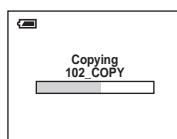
Method for copying the data in internal memory



Copy

Copies all images in the internal memory to a "Memory Stick Duo".

<input type="checkbox"/>	OK	See the following procedure.
<input checked="" type="checkbox"/>	Cancel	Cancels the copying.

- ① Insert a "Memory Stick Duo" having 32 MB or larger capacity.
- ② Select [OK] with ▲ on the control button, then press ●.
The message "All data in internal memory will be copied Ready?" appears.
- ③ Select [OK] with ▲, then press ●.
Copying starts.



- Use a fully charged Nickel-Metal Hydride battery or the AC Adaptor (not supplied). If you attempt to copy image files using a batteries with little remaining charge, the batteries may run out, causing copying to fail or possibly corrupting the data.
- You cannot copy individual images.
- The original images in the internal memory are retained even after copying. To delete the contents of the internal memory, remove the "Memory Stick Duo" after copying, then execute the [Format] command in  (Internal Memory Tool).
- You cannot select a folder copied on a "Memory Stick Duo".
- Even if you copy data, a  (Print order) mark is not copied.

Method for formatting the internal memory

This item does not appear when a "Memory Stick Duo" is inserted in the camera.
The default settings are marked with ✓.

Format

Formats the internal memory.

- Note that formatting irrevocably erases all data in the internal memory, including even protected images.

<input type="checkbox"/>	OK	See the following procedure.
<input checked="" type="checkbox"/>	Cancel	Cancels the formatting.

- ① Select [OK] with ▲ on the control button, then press ●.
The message "All data in internal memory will be erased Ready?" appears.
- ② Select [OK] with ▲, then press ●.
The format is complete.

1-1. Adjusting items when replacing main parts and boards

When replacing main parts and boards, adjust the items indicated by ● in the following table.

Note 1: The automatic Adjustment Program does not support the “Initialization of data”, “Hall Adjustment” and “Wide Limit Adjustment”. Perform them manually.

Note 2: Use the AWB Adjustment Program (H5AwbAdjustment.exe).

Note 3: When replacing the SY-150 board, erase the data in internal memory of the board before replacement.

Note 4: When replacing the SY-150 board or the IC202 on the SY-150 board, execute formatting and initialize the internal memory after replacement.

Note 5: When replacing the SY-150 board, perform “VIDEO OUT Default Data Check” and “Initial Language Data Check” after replacement.

Adjusting item	Adjustment	Replaced parts																																		
		Block replacement			Mounted parts replacement								Board replacement																							
		Lens block	Flash unit	LCD block	LCD9001	LCD unit	AF-105 board	D001	(AF illumination LED)	CD-617 board	IC002	(CCD imager)	CH-199 board	IC001	(Timing gen., CCD signal process)	SY-150 board	IC101	(Camera DSP)	SY-150 board	IC202	(One NAND flash) (Note 4)	SY-150 board	IC601	(Video amp.)	SY-150 board	SE501, 502	(PITCH, YAW sensor)	AF-105 board	(COMPLETE)	CD-617 board	(COMPLETE)	CH-199 board	(COMPLETE)	SY-150 board	(COMPLETE) (Note 3, 4, 5)	
VIDEO adjustment	Video output level adj.														●																					●
(Note 1)	Hall adj.	●																																		●
(Note 1)	Wide limit adj.	●																																		●
CAMERA adjustment 1	Flange back adj.	●									●																									●
CAMERA adjustment 2	Flange back check	●									●																									●
CAMERA adjustment 3	F No. compensation																																			
	Measure gain adj.	●																																		
	Mechanical shutter adj.																																			
	Light value adj.																																			
(Note 2)	AWB 3200K-5800K standard data input																																			
CAMERA adjustment 4	Color reproduction adj. & check																																			
	CCD linearity check																																			
	CCD white defect compensation check																																			
	CCD black defect compensation check																																			
CAMERA adjustment 5	Strobe adj.		●																																	
CAMERA adjustment 6	Auto focus illumination check																																			
CAMERA adjustment 7	Angular velocity sensor sensitivity adj.																																			
LCD adjustment	V-COM adj.																																			
	White Balance adj.				●																															
(Note 1)	Initialization of data																																			

Table 6-1-1

1-2. List of service tools

- Oscilloscope
- Color monitor



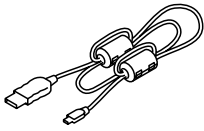
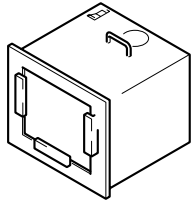
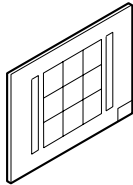
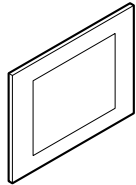
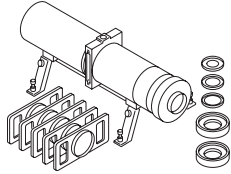
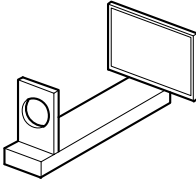
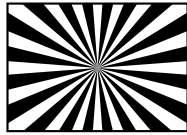
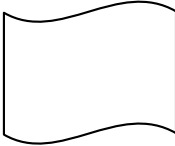
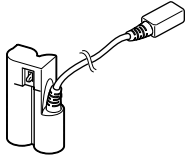
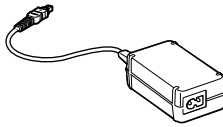
<p>J-1</p>  <p>Personal computer (Note 1)</p>	<p>J-2</p>  <p>HASP key and application for adjustment (SEUS)</p> <p>Contact our service headquarter of each area how to get the application for adjustment (SEUS) and HASP key.</p>	<p>J-3</p>  <p>USB cable 1-829-868-41</p>
<p>J-4</p>  <p>Pattern box PTB-450 J-6082-200-A or Small pattern box PTB-1450 J-6082-557-A</p>	<p>J-5</p>  <p>9 colors chart (Note 2)</p> <p>For PTB-1450: J-6082-562-A</p>	<p>J-6</p>  <p>Clear chart</p> <p>For PTB-450: J-6080-621-A</p> <p>For PTB-1450: J-6082-560-A</p>
<p>J-7</p>  <p>Minipattern box J-6082-353-B</p>	<p>J-8</p>  <p>Flange back adjustment jig J-6082-563-A</p>	<p>J-9</p>  <p>Siemens star chart J-6080-875-A</p>
<p>J-10</p>  <p>Back ground paper J-2501-130-A</p>	<p>J-11</p>  <p>Connection code DK-2AA 1-830-351-21</p>	<p>J-12</p>  <p>AC power adaptor AC-LS5 1-479-284-51</p>

Fig. 6-1-1

Note1: Personal computer

OS: Windows98/98SE/Me/2000/XP Home/XP Pro
RAM: 256MB or more recommended
USB: 2.0 recommended (also compatible with 1.1)
Two connectors are required.

Note2: In using the 9 colors chart on the pattern box PTB-450, adjust the chart size through the procedure shown below so that it matches to the pattern box PTB-450.

- 1) Prepare a woody board A of the thickness 5 mm, and paint it mat-black.
- 2) Fit the 9 colors chart in the woody board A, and secure the chart with a black tape, etc. to shield the light.

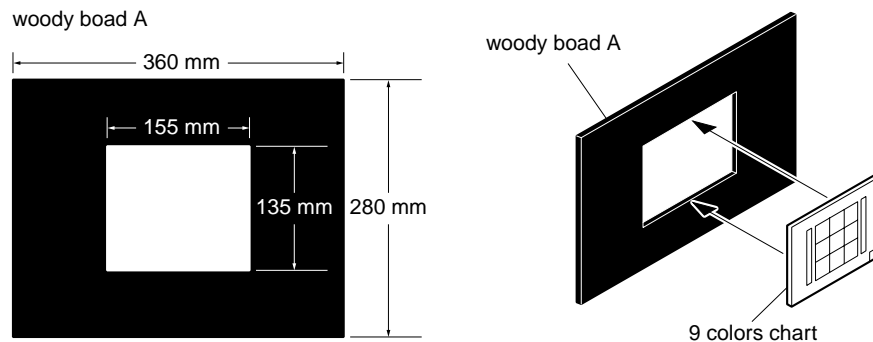


Fig. 6-1-2

6-1. CAMERA SECTION ADJUSTMENTS

1-1. PREPARATIONS BEFORE ADJUSTMENTS

1-1-1. Preparations

- 1) Connect the equipment for adjustments according to Fig. 6-1-4.
- 2) Start up the application for adjustment (SEUS).

Note: Before perform the adjustment, set the following data.

- 1) Select page: 40, address: 38 and set data: 00.

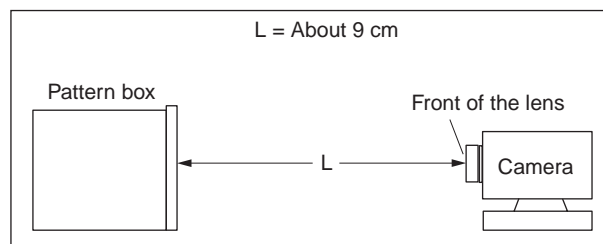


Fig. 6-1-3

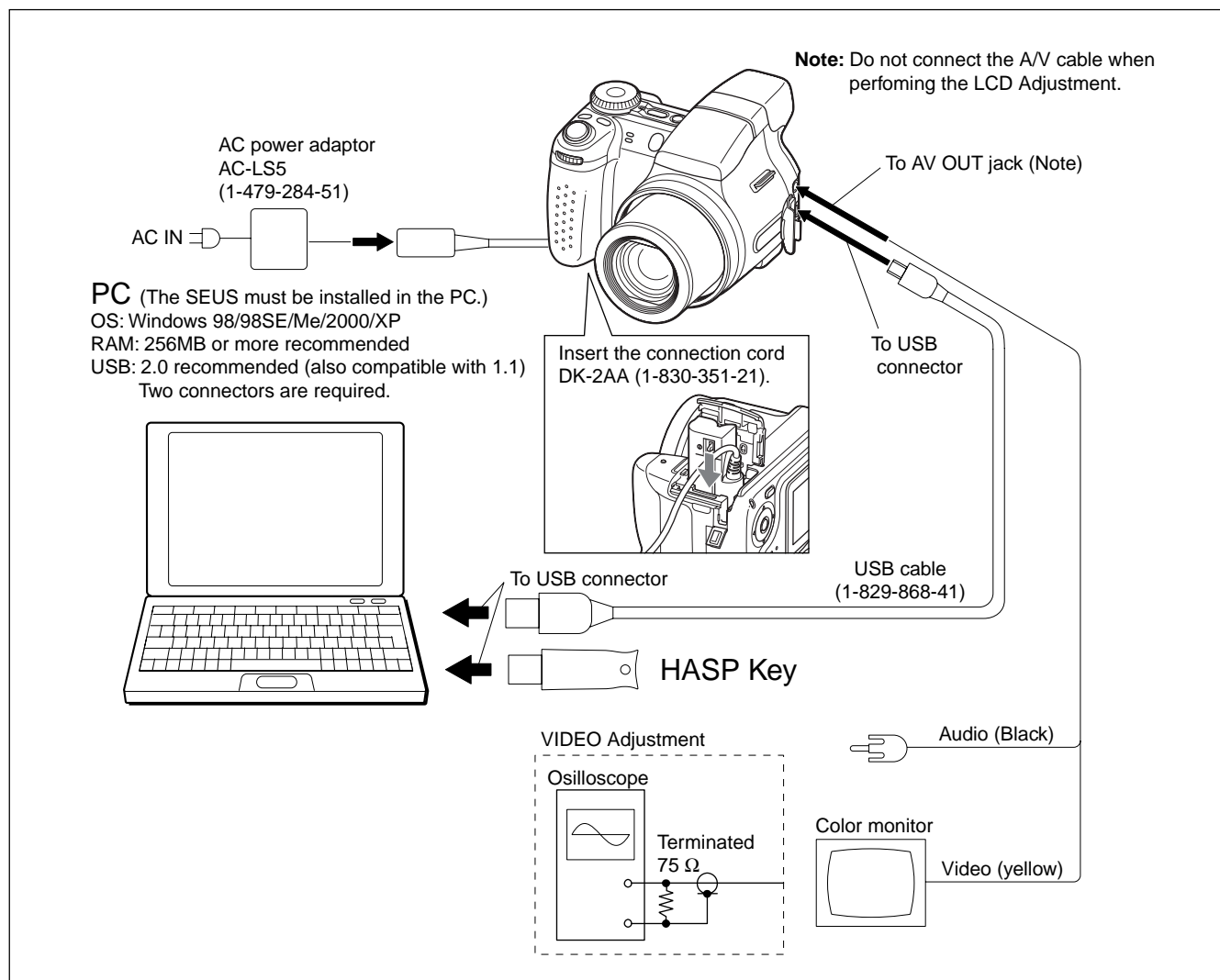


Fig. 6-1-4

1-1-2. Precautions

1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments.

1. Mode dial CAMERA (Auto)
2. ZOOM lever WIDE end
3. Digital Zoom (SET UP setting) Off

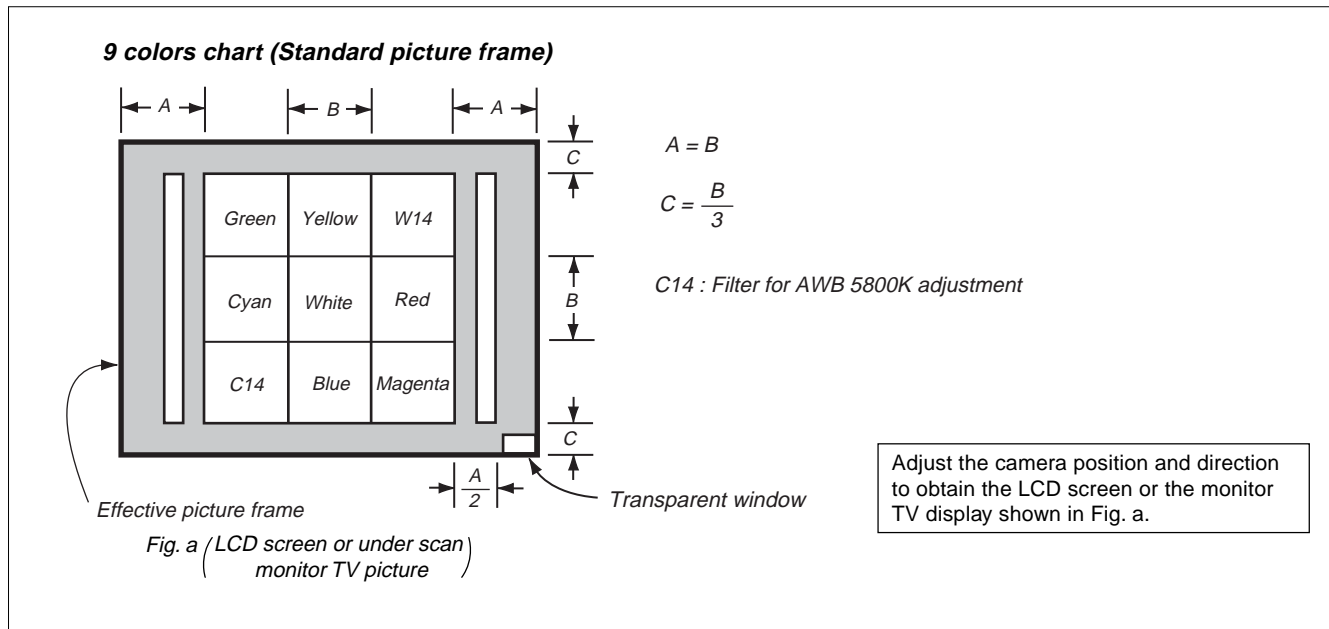


Fig. 6-1-5

2. Subjects

- 1) 9 colors chart (Standard picture frame).

When performing adjustments using the 9 colors chart, adjust the picture frame as shown in Fig. 6-1-5. (Standard picture frame)

- 2) Clear chart (Standard picture frame)

Remove the 9 colors chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time)

3. Preparing the Flash Adjustment Box

A dark room is required to provide an accurate flash adjustment.

If it is not available, prepare the flash adjustment box as given below;

- 1) Provide woody board A, B and C of 15 mm thickness.

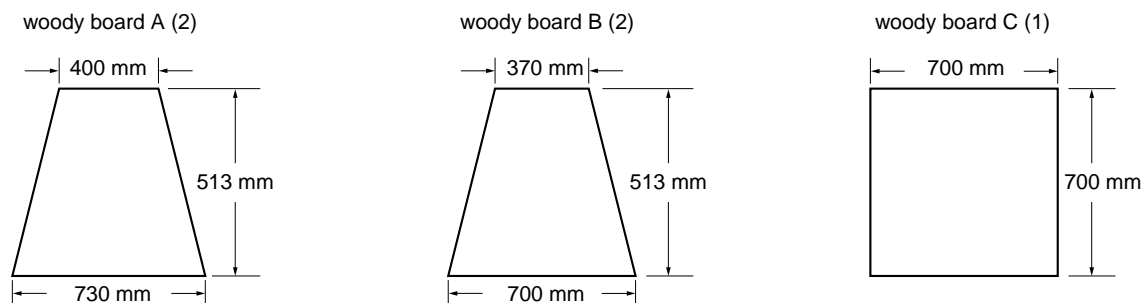


Fig. 6-1-6

- 2) Apply black mat paint to one side of woody board A and B.
- 3) Attach background paper (J-2501-130-A) to woody board C.
- 4) Assemble so that the black sides and the background paper side of woody board A, B and C are internal. (Fig. 6-1-7)

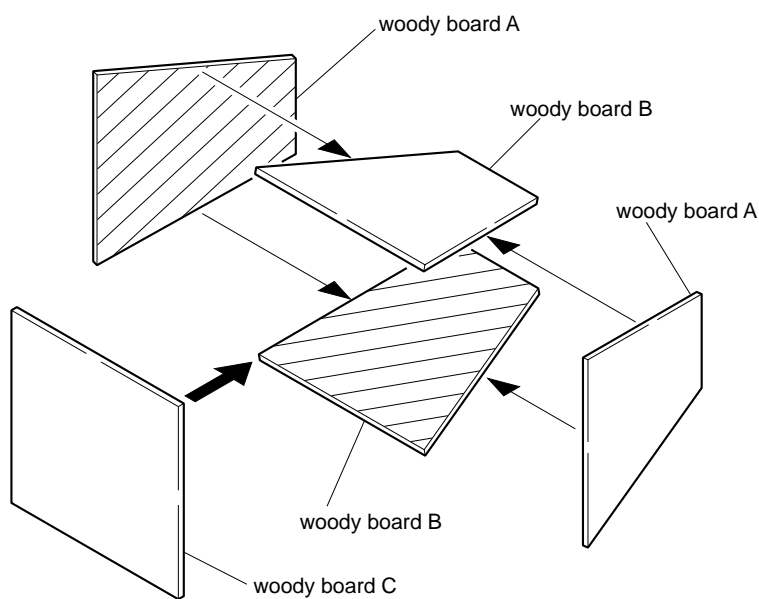


Fig. 6-1-7

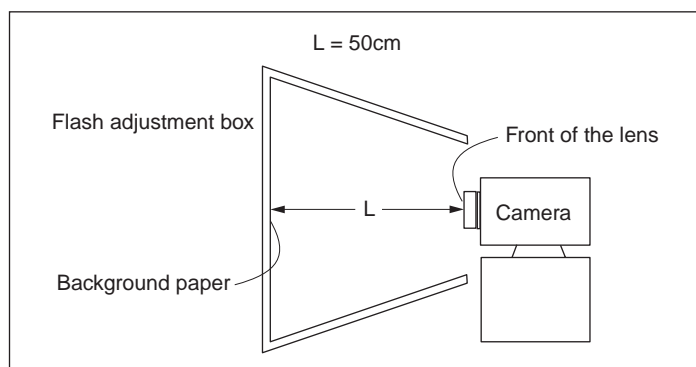


Fig. 6-1-8

1-1-3. Using Method of SEUS

The application for adjustment (SEUS) is used to change the coefficient for calculating the signal processing or EVR data. The SEUS performs two-way communication between PC and set through the USB terminal. The two-way communication result data can be written to the nonvolatile memory.

1. Connection

- 1) Connect the HASP key to the USB terminal of the PC.
- 2) Connect the PC and set with the USB cable.
- 3) Confirm that the set starts in the USB mode.
- 4) Start the SEUS on the PC.
- 5) Click **[Connect]** on the SEUS screen. If the connection is normal, the SEUS screen will be as shown in Fig. 6-1-9, indicating the “connected” state.

Note: The SEUS will go in “disconnect” state, if the set is turned off (for instance, by resetting the set). In such a case, click **[Connect]** on the SEUS screen to restore the “connected” state.

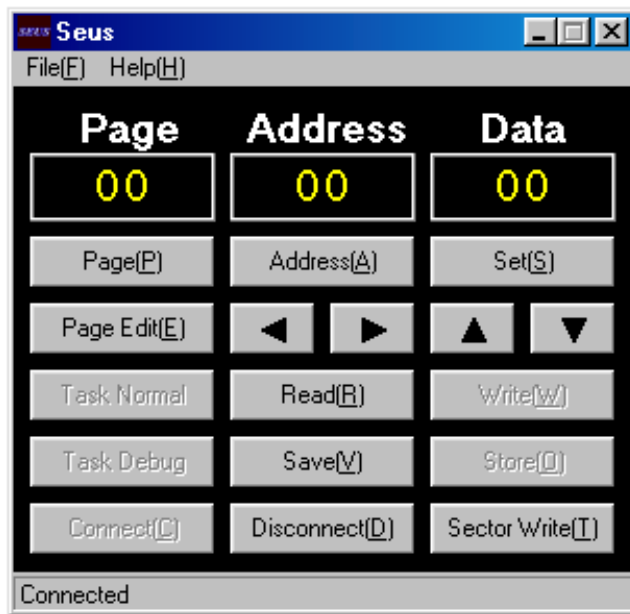


Fig. 6-1-9

2. Operation

- **Page change**
To change the page, click **[Page]** on the SEUS screen and enter the page to be changed. The page is displayed in hexadecimal notation.
- **Address change**
To change the address, click **[Address]** on the SEUS screen and enter the address to be changed. The address is displayed in hexadecimal notation.
- **Data change**
To change the data, click **[Set]** on the SEUS screen and enter the data. The data is displayed in hexadecimal notation.
This operation does not write the data to the nonvolatile memory.
- **Data saving**
To write the all changed data to the nonvolatile memory, click **[Save]** on the SEUS screen and wait for more than 3 sec.
- **Data reading**
The data displayed on the SEUS screen are the data values at the time when the pages and addresses were set, and they are not updated automatically. To check the data change, click **[Read]** on the SEUS screen and update the displayed data.

1-1-4. Precaution on Use of SEUS

Wrong SEUS operation could clear correct adjustment data. To prevent the data clear by mistake, it is recommended to save all adjustment data by clicking **[Page Edit]** on the SEUS screen before starting the adjustment.

Saving Method:

- 1) Click **[Page Edit]** on the SEUS screen to display the SEUS PAGE EDIT screen.
- 2) Click **[Page]**, and enter the page number to be saved.
- 3) Click **[Read]** to read the data to be saved from the camera.
- 4) Click **[File]** and save the data to PC.

Loading Method:

- 1) Select page: 00, address: 01 and set data: 01.
- 2) Click **[Page Edit]** on the SEUS screen to display the SEUS PAGE EDIT screen.
- 3) Click **[File]** and load the data from PC.
- 4) Click **[Write]** on the SEUS PAGE EDIT screen.
- 5) Click **[Close]** to close the SEUS PAGE EDIT screen.
- 6) Select page: 40, address: 38 and set data: 00.
- 7) Click **[Save]** on the SEUS screen.
- 8) Select page: 80, address: 34, and check that the data is “00”.
- 9) Select page: 80, address: 30, and check that the data is “00”.
- 10) Select page: 00, address: 01 and set data: 00.

1-2. ADJUSTMENT PROGRAMS

The DSC-H5 is adjusted with the Automatic Adjustment Program and the AWB Adjustment Program.

The Automatic Adjustment Program automatically controls the adjustment operations that were formerly entered manually on the operation screen of the SEUS (some adjustments may be manually operated on the SEUS operation screen).

The AWB Adjustment Program automatically performs “AWB 3200K-5800K Standard Data Input” of Camera System Adjustment.

1-2-1. Automatic Adjustment Program

1. Precautions When Using Automatic Adjustment Program

- 1) The Automatic Adjustment Program writes the adjustment results such as EVR data to the set through two-way communication with the camera via the SEUS. Accordingly, the Automatic Adjustment Program must be used in the environment where the SEUS operates.
- 2) The program run time may vary depending on the environment of the personal computer used.
- 3) The SEUS must be already started on the PC when using the Automatic Adjustment Program. With the SEUS not started, some adjustment items will take time in adjustment.

2. Start of Automatic Adjustment Program

Double-click the application file (DSC-H5 Auto-Adj Ver_1.□r□□.exe), and the Automatic Adjustment Program will start.

Note: □ (numeric value) of the file name varies depending on the version of Automatic Adjustment Program.

3. Function of Each Button on Main Menu Screen

When the Automatic Adjustment Program started, the Main Menu screen in Fig. 6-1-10 will appear. On this screen, select each adjustment section.

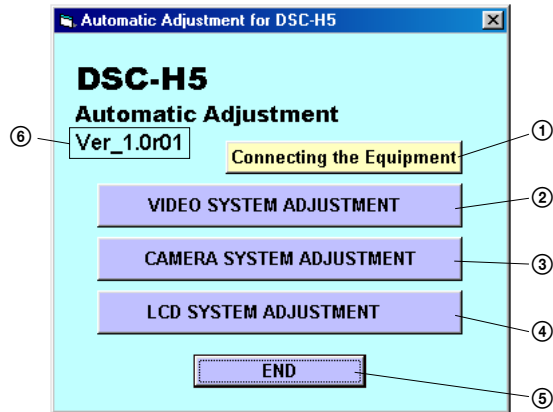


Fig. 6-1-10

- ① **Connecting the Equipment** button
A connection diagram of the equipment is displayed.
- ② **VIDEO SYSTEM ADJUSTMENT** button
The “VIDEO SYSTEM ADJUSTMENT” screen appears.
- ③ **CAMERA SYSTEM ADJUSTMENT** button
The “CAMERA SYSTEM ADJUSTMENT” screen appears.
- ④ **LCD SYSTEM ADJUSTMENT** button
The “LCD SYSTEM ADJUSTMENT” screen appears.
- ⑤ **END** button
The Automatic Adjustment Program finishes.
- ⑥ This part indicates the version of Automatic Adjustment Program.

1-2-2. AWB Adjustment Program

1. Application Environment

OS: Windows 98/98SE/Me/2000/XP

RAM: 256MB or more recommended

USB: 2.0 recommended (also compatible with 1.1)

Two connectors are required.

2. Installation Method

Extract the file compressed in the ZIP format (H5AWBAdjustment.zip). Execute the extracted file (setup.exe), and the installer will start. Install the program following the instructions given on the installer screen.

3. Notes When Using the AWB Adjustment Program

- 1) The SEUS must be installed in the PC.
- 2) The HASP Key for SEUS must be connected to the USB connector. The program will not start unless the HASP Key is connected.

4. Starting Method of AWB Adjustment Program

Click the **[Start]** button on the task bar, and click the **[DSC-H5 AWB Adjustment]** from the **[Programs]**, and the program will start.

5. Screen and Function of Each Button of AWB Adjustment Program

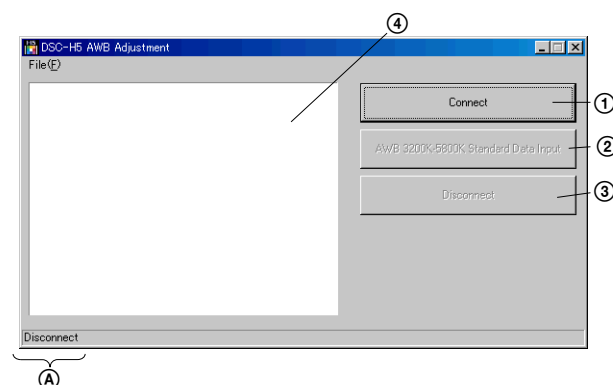


Fig. 6-1-11

- ① **[Connect]** button
Makes connection to the camera and switches the camera to the adjustment mode. In the case of successful connection to the camera, the indication at the part (A) changes to “Connected” and the following buttons become active.
 - **[AWB 3200K-5800K Standard Data Input]** button
 - **[Disconnect]** button
- ② Adjustment start buttons
Start the adjustment or checking of respective button names.
- ③ **[Disconnect]** button
Cancels the connection to the camera.
- ④ Captured picture display screen
Displays a picture captured by the camera when the adjustment or checking is performed.

1-3. VIDEO SYSTEM ADJUSTMENTS

1-3-1. Function of Each Button on Video System Adjustment Screen

Click the VIDEO SYSTEM ADJUSTMENT button on the Main Menu screen, and the “VIDEO SYSTEM ADJUSTMENT” screen in Fig. 6-1-12 will appear.

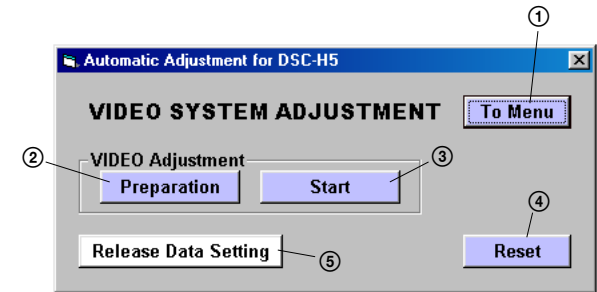


Fig. 6-1-12

- ① **To Menu** button
The Main Menu screen comes back.
- ② **Preparation** button
Notes for adjustment or jigs used are displayed.
- ③ **Start** button
“Video Adjustment” starts.
- ④ **Reset** button
This button functions same as the “Initialize” of the setup screen.
- ⑤ **Release Data Setting** button
The data setting at the adjustment is cancelled.
During the data setting, the button color changes from “white” to “red”. When the data setting is cancelled, the button color returns to “white”.
(Use this button when an error occurred in the video adjustment. If the adjustment completed successfully, the data setting is automatically cancelled and the button color returns to “white”.)

1-3-2. Adjustment Items of VIDEO System Adjustment

The adjustment items of video system adjustment are as listed in Table 6-1-2. The Automatic Adjustment Program executes the adjustment items if the VIDEO Adjustment Start button is clicked.

Button Name	Adjustment	Signal	Page	Address
VIDEO Adjustment	VIDEO Output Level Adj.	Arbitrary	8F	D0

Table 6-1-2

1-3-3. Adjusting Method

[Automatic Adjustment Program execution items and sequence]

1. Data Setting during Video Adj.
2. Video Output Level Adj.
3. Release of Data Setting during Video Adj.

[Specified value of video output level adj.]

Measurement Point	Video terminal of AV OUT jack (75 Ω terminated)
Measuring Instrument	Oscilloscope
Specified Value	Sync level: A = 286 ± 5 mV (NTSC mode) A = 300 ± 5 mV (PAL mode) Burst level: B = 286 ± 25 mV (NTSC mode) B = 300 ± 25 mV (PAL mode)

[Adjusting method]

- 1) Click the **[Start]** button of the VIDEO Adjustment.
- 2) The Automatic Adjustment Program executes the “1. Data Setting during Video Adj.”.
- 3) If “1. Data Setting during Video Adj.” completed successfully, the next message is displayed during the execution of “2. Video Output Level Adj.”. Using the UP/DOWN key on the SEUS Operation screen, adjust so that the sync level of the video signals satisfies the specified value. After the adjustment, check that the burst level of the video signals satisfies the specified value, and click the **[OK]** button in the message.

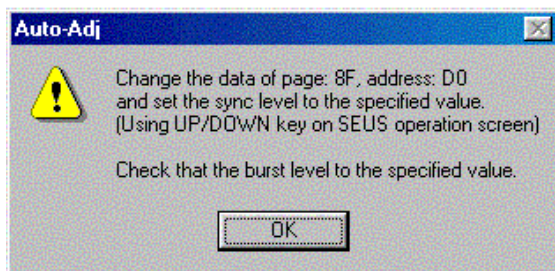


Fig. 6-1-13

- 4) If the **[OK]** button is clicked, “3. Release of Data Setting during Video Adj.” will be executed.
- 5) Upon successful completion of all items of the VIDEO Adjustment, the following message is displayed. Click the **[OK]** button.



Fig. 6-1-14

SEUS operation screen



Fig. 6-1-15

Check on the oscilloscope

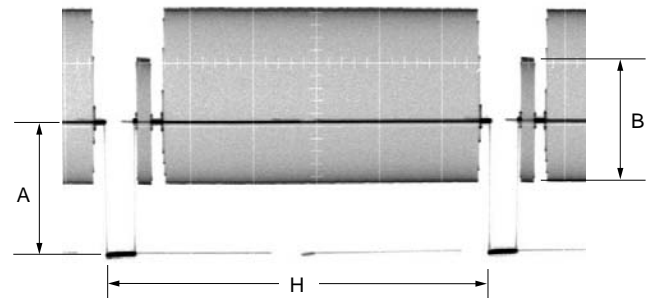


Fig. 6-1-16

1-4. CAMERA SYSTEM ADJUSTMENTS

1-4-1. Function of Each Button on Camera System Adjustment Screen

Click the **CAMERA SYSTEM ADJUSTMENT** button on the Main Menu screen, and the “CAMERA SYSTEM ADJUSTMENT” screen in Fig. 6-1-17 will appear.

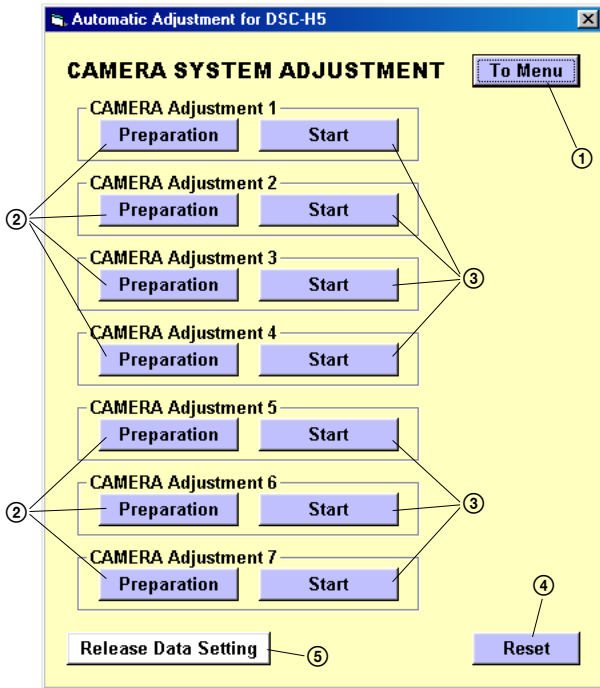


Fig. 6-1-17

- ① **To Menu** button
The Main Menu screen comes back.
- ② **Preparation** button
Notes for adjustment or jigs used are displayed.
- ③ **Start** button
Each adjustment from “Camera Adjustment 1” to “Camera Adjustment 7” starts.
- ④ **Reset** button
This button functions same as the “Initialize” of the setup screen.
- ⑤ **Release Data Setting** button
The data setting at the adjustment is cancelled.
During the data setting, the button color changes from “white” to “red”. When the data setting is cancelled, the button color returns to “white”.
(Use this button when an error occurred in the camera adjustment 1-7. If the adjustment completed successfully, the data setting is automatically cancelled and the button color returns to “white”.)

1-4-2. Adjustment Items of Camera System Adjustment

The adjustment items of camera system adjustment are as listed in Table 6-1-3. The Automatic Adjustment Program divides the adjustment items into seven, camera adjustment 1-7. Clicking either CAMERA Adjustment Start button allows the adjustment item which corresponds to that button to be executed.

The adjustment conditions of the subject and filter vary depending on which item is adjusted. The Adjustment Program displays an instruction for the subject and filter as a message during the adjustment.

Button Name	Adjustment	Subject	Adjustment Page	Adjustment Address
(Note 1)	Hall Adj.	Not required	CE	54 to 57
(Note 1)	Wide Limit Adj.	Not required	6F	18, 19
CAMERA Adjustment 1	Flange Back Adj.	Siemens star chart with ND filter for minipattern box (Note 2) or Flange back adjustment jig	6D	A4 to AF, D0 to F7
			6F	18 to 3F, 52, 53
CAMERA Adjustment 2	Flange Back Check	Siemens star (1.0m from front the lens) (Luminance: 200 to 400 lux)	—	—
CAMERA Adjustment 3	F No. Compensation	Clear chart (Standard picture frame)	6F	60 to 63, 6B to 6D
	Measure Gain Adj.		6F	6B, 6F
			78	0C to 0F
	Mechanical Shutter Adj.		6F	6B to 6D, B8 to BD, C7 to C9
			79	40 to 42, 45 to 47, 4A
Light Value Adj.	6F	65 to 67		
(Note 3)	AWB 3200K-5800K Standard Data Input	9 color chart (Standard picture frame)	6E	00 to 21, 24 to 49
CAMERA Adjustment 4	Color Reproduction Adj. & Check	9 color chart (Standard picture frame)	6E	50 to 57
	CCD Linearity Check	Clear chart (Standard picture frame)	—	—
	CCD White Defect Compensation Check		—	—
	CCD Black Defect Compensation Check		—	—
CAMERA Adjustment 5	Strobe Adj.	Flash adjustment box (50 cm)	6E	72 to 75
			6F	D8 to EF
CAMERA Adjustment 6	Auto Focus Illumination Check	Flash adjustment box (50 cm)	6F	10 to 15
CAMERA Adjustment 7	Angular Velocity Sensor Sensitivity Adj.	Not required	CF	0C, 0D

Note 1: The Automatic Adjustment Program does not support the “Hall Adjustment” and “Wide Limit Adjustment”.

Note 2: Dark Siemens star chart.

Note 3: Use the AWB Adjustment Program (H5AwbAdjustment.exe).

Table 6-1-3

1-4-3. Adjusting Method

1. Hall Adjustment

Perform this adjustment only when replacing the lens block. When the microprocessor, circuit etc. is damaged, don't perform this adjustment but check the operations only.

Adjustment Page	CE
Adjustment Address	54 to 57

1-1. Adjusting method when the lens is replaced:

Adjusting method:

Order	Page	Address	Data	Procedure
1	00	01	01	Set the data.
2	40	38	00	Set the data.
3	CE	54		Set the data. (Note)
4	CE	55		Set the data. (Note)
5	CE	56		Set the data. (Note)
6	CE	57		Set the data. (Note)
7				Save the data.
8	80	34		Check the data is "00".
9	80	30		Check the data is "00".

Note: The data of page: CE, address: 54 to 57, that are set in the Orders 3 to 6 as described above, are shown on the data sheet supplied with the replacement lens for repair.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	00	01	00	Set the data.
2				Check that the steady shot operations have been performed normally.

1-2. Adjusting method when replacement of lens is not required and the SY-150 board is replaced:

When the data of page: CE, address: 54 to 57 can be read from the defective SY-150 board before replacement, and all of the data are not "00":

Adjusting method:

Order	Page	Address	Data	Procedure
1	00	01	01	Set the data.
2	40	38	00	Set the data.
3	CE	54		Set the previous data
4	CE	55		Set the previous data
5	CE	56		Set the previous data
6	CE	57		Set the previous data
7				Save the data.
8	80	34		Check the data is "00".
9	80	30		Check the data is "00".

When the data of the page: CE, address: 54 to 57 can be read out from the defective SY-150 board before replacing it, and all of the data are "00":

- 1) Replace the lens with the replacement lens and perform "1-1. Adjusting method when the lens is replaced".

When the data of page: CE, address: 54 to 57 cannot be read from the defective SY-150 board:

- 1) Replace the lens with the replacement lens and perform "1-1. Adjusting method when the lens is replaced".

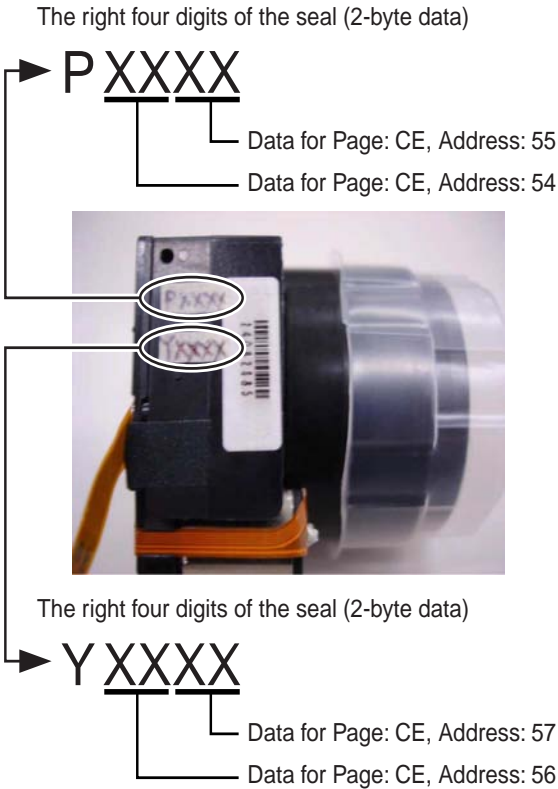


Fig. 6-1-18

2. Wide Limit Adjustment

Adjustment to remove variations at the wide end of the inner focus lens.

Adjustment Page	6F
Adjustment Address	18, 19

2-1. Adjusting method when the lens is replaced:

Adjusting method:

Order	Page	Address	Data	Procedure
1	00	01	01	Set the data.
2	40	38	00	Set the data.
3	6F	18		Set the data. (Note)
4	6F	19		Set the data. (Note)
5	7C	16	01 → 00	Change the data. (The data is OK if it is "00".)
6				Save the data.
7	80	34		Check the data is "00".
8	80	30		Check the data is "00".
9				Perform "Flange Back Adjustment".

Note: The data of page: 6F, address: 18 and 19, that are set in the Orders 3 and 4 as described above, are shown on the data sheet supplied with the replacement lens for repair. Set the upper single byte of the 2-byte data shown on the sheet to address: 18, and the lower byte of the data to the address: 19.

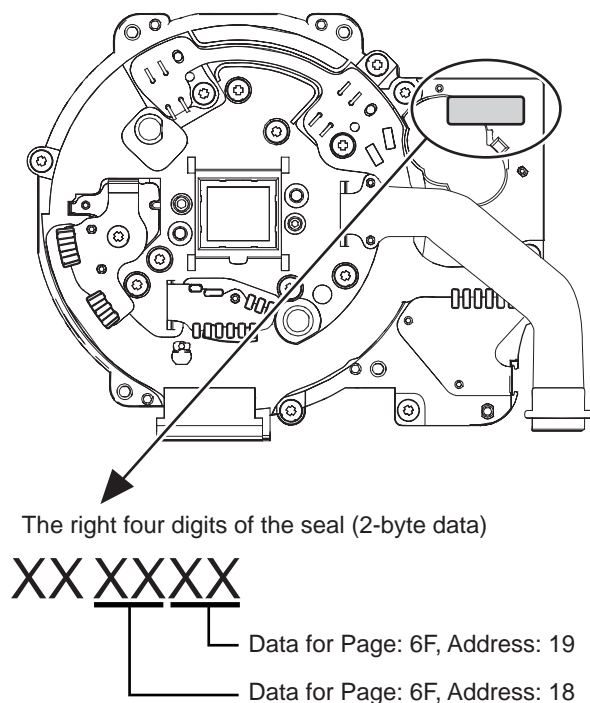


Fig. 6-1-19

2-2. Adjusting method when replacement of lens is not required and the SY-150 board is replaced:

When the data of page: 6F, address: 18 and 19 can be read from the defective SY-150 board before replacement, and both of the data are not "00":

Adjusting method:

Order	Page	Address	Data	Procedure
1	00	01	01	Set the data.
2	40	38	00	Set the data.
3	6F	18		Set the previous data
4	6F	19		Set the previous data
5	7C	16	01 → 00	Change the data. (The data is OK if it is "00".)
6				Save the data.
7	80	34		Check the data is "00".
8	80	30		Check the data is "00".
9				Perform "Flange Back Adjustment".

When the data of the page: 6F, address: 18 and 19 can be read out from the defective SY-150 board before replacing it, and both of the data are "00":

- 1) Replace the lens with the replacement lens and perform "2-1. Adjusting method when the lens is replaced".

When the data of page: 6F, address: 18 and 19 cannot be read from the defective SY-150 board:

- 1) Replace the lens with the replacement lens and perform "2-1. Adjusting method when the lens is replaced".

Note: The data of page: 7C, address: 16, that is set in the Order 5 of the adjusting method of 2-1 or 2-2, is "01" when shipped from the factory. Let the data remain "00" after completion of the service adjustment.

3. CAMERA Adjustment 1

[Automatic Adjustment Program execution items and sequence]

1. Data Setting during Camera Adj.
2. Flange Back Adj.
3. Release of Data Setting during Camera Adj.

Preparation of Flange Back Adj.

(Using the minipattern box)

- 1) The minipattern box is installed as shown in the following figure.

Note 1: The attachment lenses are not used.

Note 2: Take care not to hit the mini-pattern box when extending the lens.

- 2) Install the minipattern box so that the distance between it and the front of lens of camera is less than 3 cm.
- 3) Make the height of minipattern box and the camera equal.
- 4) Check the output voltage of the regulated power supply is the specified voltage ± 0.01 Vdc.
- 5) Check that the center of Siemens star chart meets the center of shot image screen with the zoom lens at TELE end and WIDE end respectively.

Specified voltage: The specified voltage varies according to the minipattern box, so adjustment the power supply output voltage to the specified voltage written on the sheet which is supplied with the mini-pattern box.

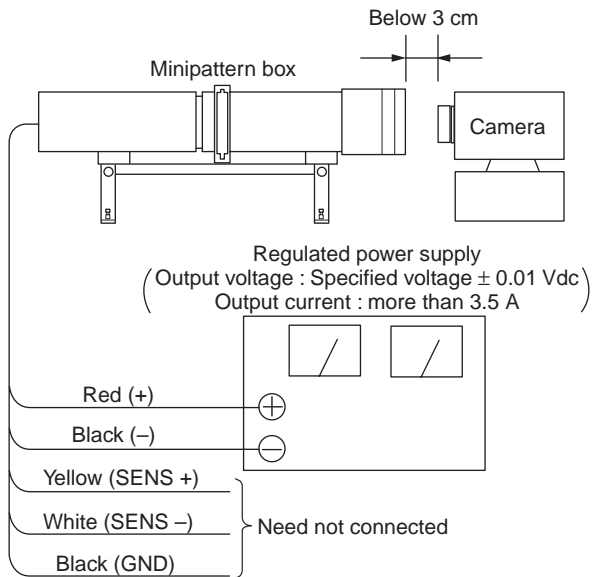


Fig. 6-1-20

Preparation of Flange Back Adj.

(Using the flange back adjustment jig)

(Luminance: about 300 lux)

Note 3: When using the flange back adjustment jig, take care of the following points:

- For the illumination, use a light source such as an incandescent lamp or inverter type fluorescent light free from flickering.
- Do not make an adjustment in the environment where fluorescent lamp flickering occurs even if the illuminance can be ensured with the room illumination only. Use an incandescent lamp or inverter type fluorescent light at a place free from the influence of room illumination.

- 1) Install the flange back adjustment jig so that the distance between it and the front of lens of camera is less than 3 cm.

Note 4: Take care not to hit the flange back adjustment jig when extending the lens.

- 2) Make the height of flange back adjustment jig and the camera equal.
- 3) Check that the center of chart meets the center of shot image screen with the zoom lens at TELE end and WIDE end respectively.

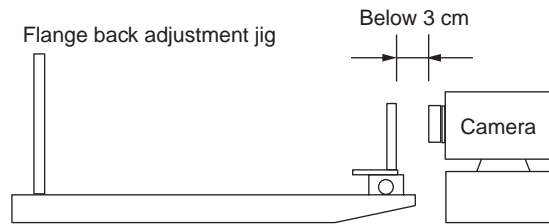


Fig. 6-1-21

[Adjusting method]

- 1) If the **[Start]** button of the CAMERA Adjustment 1 is clicked, the following message is displayed.
If “Wide Limit Adjustment” is necessary, click the **[Cancel]** button to interrupt the Adjustment Program, and perform “2. Wide Limit Adjustment”.

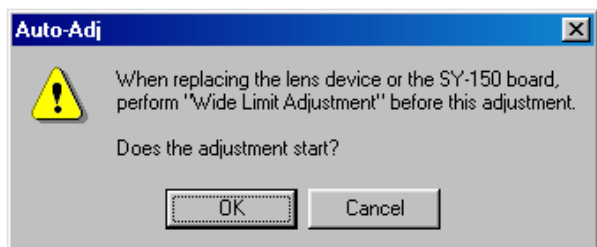


Fig. 6-1-22

- 2) If the **[OK]** button is clicked, the Automatic Adjustment Program executes “1. Data Setting during Camera Adj.”.
- 3) Upon successful completion of the “1. Data Setting during Camera Adj.”, the following message is displayed. Set the subject by referring to “Preparation of Flange Back Adj.”.

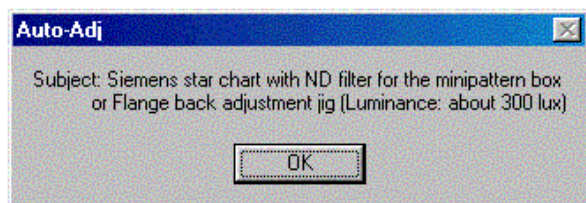


Fig. 6-1-23

- 4) If the **[OK]** button is clicked, “2. Flange Back Adj.” and “3. Release of Data Setting during Camera Adj.” will be executed.
- 5) Upon successful completion of all items of the CAMERA Adjustment 1, the following message is displayed. Click the **[OK]** button.

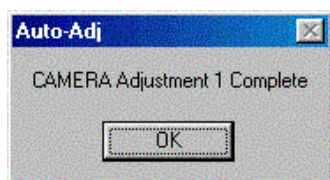


Fig. 6-1-24

4. CAMERA Adjustment 2

[Automatic Adjustment Program execution items and sequence]

1. Data Setting during Camera Adj.
2. Flange Back Check
3. Release of Data Setting during Camera Adj.

[Adjusting method]

- 1) Click the **[Start]** button of the CAMERA Adjustment 2.
- 2) The Automatic Adjustment Program executes “1. Data Setting during Camera Adj.”.
- 3) Upon successful completion of the “1. Data Setting during Camera Adj.”, the following message is displayed. Set the subject in accordance with the message.

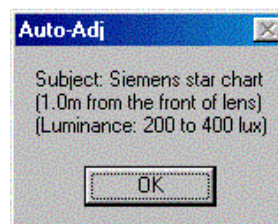


Fig. 6-1-25

- 4) Click the **[OK]** button is clicked, “2. Flange Back Check” is executed. The following messages are displayed, and then operate the camera to make a check in accordance with the messages.

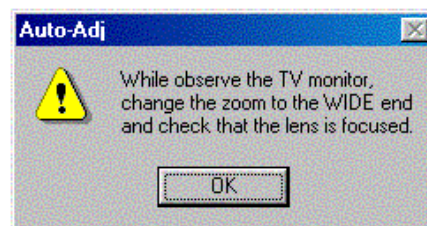
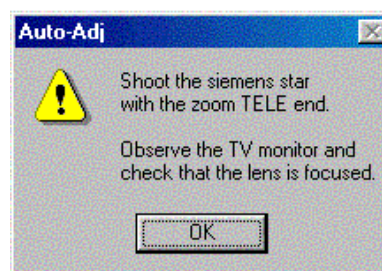


Fig. 6-1-26

- 5) Upon completion of “2. Flange Back Check”, “3. Release of Data Setting during Camera Adj.” is executed.
- 6) Upon successful completion of all items of the CAMERA Adjustment 2, the following message is displayed. Click the **[OK]** button.

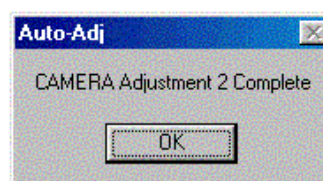


Fig. 6-1-27

5. Picture Frame Setting (Standard Picture Frame)

In the "CAMERA Adjustment 3", "AWB 3200K-5800K Standard Data Input" and "CAMERA Adjustment 4", set the picture frame so as to attain the positions shown in the following figure when shooting the 9 colors chart.

Check on the oscilloscope

Measurement Point: Video terminal of AV OUT jack
(75Ω terminated)

1. Horizontal period

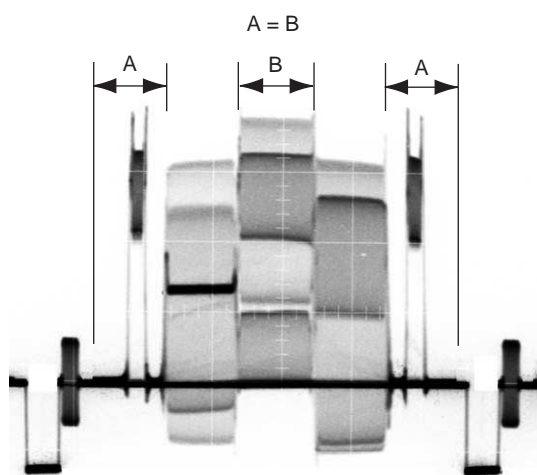


Fig. 6-1-28

2. Vertical period

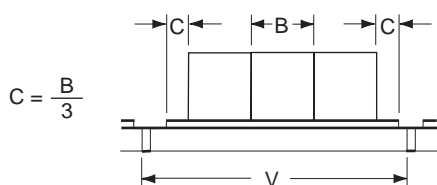


Fig. 6-1-29

Check on the monitor TV or the LCD screen

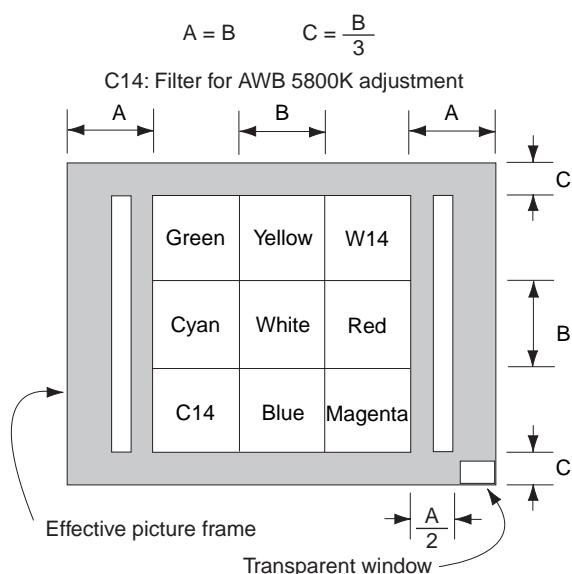


Fig. 6-1-30

6. CAMERA Adjustment 3

[Automatic Adjustment Program execution items and sequence]

1. Data Setting during Camera Adj.
2. Picture Frame Setting
3. F No. Compensation
4. Measure Gain Adj.
5. Mechanical Shutter Adj.
6. Light Value Adj.
7. Release of Data Setting during Camera Adj.

[Adjusting method]

- 1) Click the **[Start]** button of the CAMERA Adjustment 3.
- 2) The Automatic Adjustment Program executes the "1. Data Setting during Camera Adj."
- 3) Upon successful completion of "1. Data Setting during Camera Adj.", "2. Picture Frame Setting" is executed. The following message is displayed, and then referring to Fig. 6-1-28 to Fig. 6-1-30, set the subject and click the **[OK]** button.

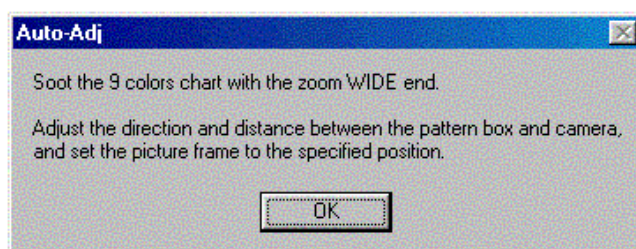


Fig. 6-1-31

After that, the next message is displayed. Then, change the chart in accordance with the message.

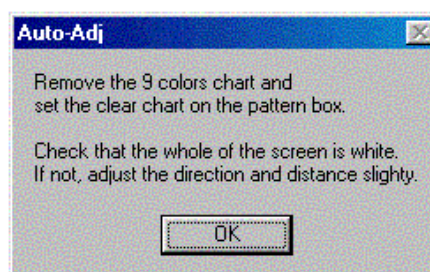


Fig. 6-1-32

- 4) Click the **[OK]** button, and the items from "3. F No. Compensation" to "7. Release of Data Setting during Camera Adj." will be executed.
- 5) Upon successful completion of all items of the CAMERA Adjustment 3, the following message is displayed. Click the **[OK]** button.

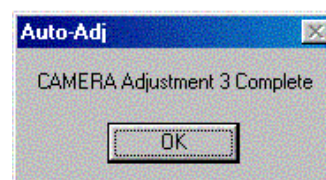


Fig. 6-1-33

7. AWB 3200K-5800K Standard Data Input

[Adjustment method]

- 1) Start the AWB Adjustment Program (H5AwbAdjustment.exe).
- 2) Click the **Connect** button to set the camera to the adjustment mode.

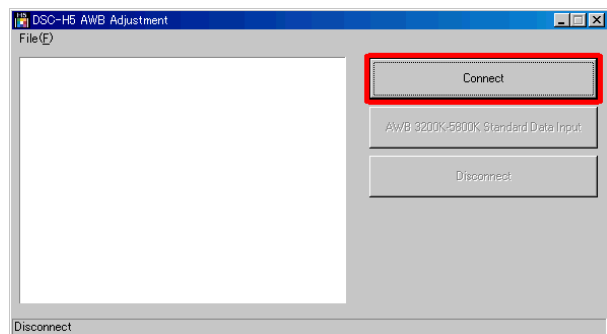


Fig. 6-1-34

- 3) Adjust the mode dial of the camera to “CAMERA” and set MACRO mode. Shoot the 9 colors chart with the zoom at WIDE end.
- 4) Adjust the camera direction and distance to set the picture frame. (Refer to 5. Picture Frame Setting)
- 5) Click the **AWB 3200K-5800K Standard Data Input** button.

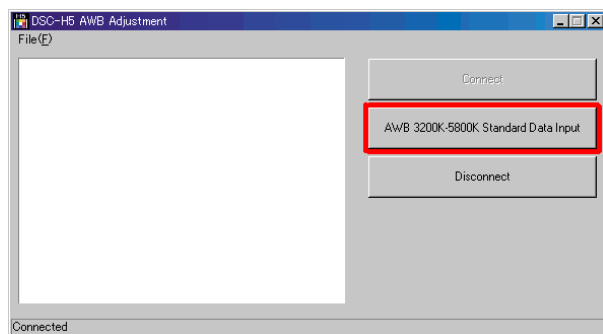


Fig. 6-1-35

- 6) A picture captured by the camera is displayed on the screen, and the adjustment and checking are performed.

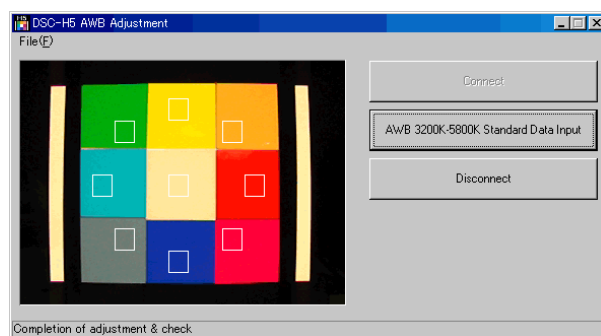


Fig. 6-1-36

Note: If the following message is displayed, the picture frame setting is faulty. Check the picture frame, and then perform readjustment.

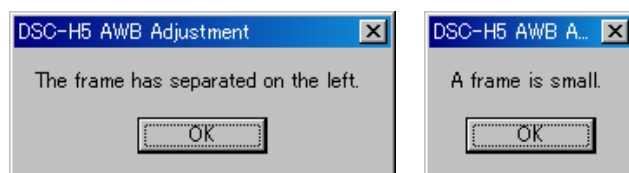


Fig. 6-1-37

- 7) Upon successful completion of the adjustment, the following message is displayed. Click the **OK** button.

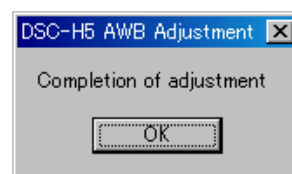


Fig. 6-1-38

- 8) Perform the “Camera Adjustment 4” successively without turning off the power switch of the camera.

8. CAMERA Adjustment 4

Note: After executing the “AWB 3200-5800K Standard Data Input” perform the “CAMERA Adjustment 4” successively without turning off the power switch of the camera.

[Automatic Adjustment Program execution items and sequence]

1. Data Setting during Camera Adj.
2. Picture Frame Setting
3. Color Reproduction Adj. & Check
4. CCD Linearity Check
5. CCD White Defect Compensation Check
6. CCD Black Defect Compensation Check
7. Release of Data Setting during Camera Adj.

[Adjusting method]

- 1) Click the **[Start]** button of the CAMERA Adjustment 4.
- 2) The Automatic Adjustment Program executes the “1. Data Setting during Camera Adj.”.
- 3) Upon successful completion of “1. Data Setting during Camera Adj.”, “2. Picture Frame Setting” is executed. The following message is displayed, and then referring to Fig. 6-1-28 to Fig. 6-1-30 (See page 6-20), set the subject and click the **[OK]** button.

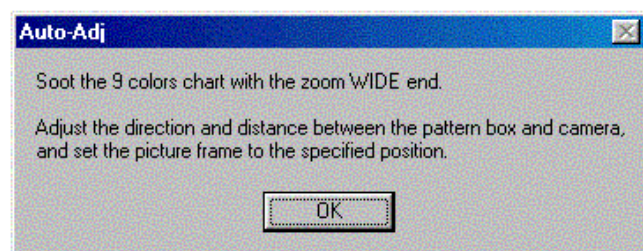


Fig. 6-1-39

- 4) After that, “3. Color Reproduction Adj. & Check” will be executed. Upon completion of adjustment, the check result is displayed on the Color Reproduction Check screen.

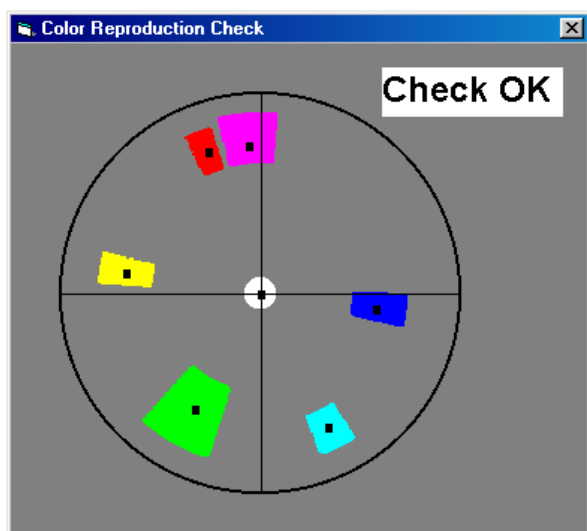


Fig. 6-1-40

At this time, the following message is displayed, and click the **[Yes]** button if the check result display at the upper right of Color Reproduction Check screen is OK, or the **[No]** button if NG.

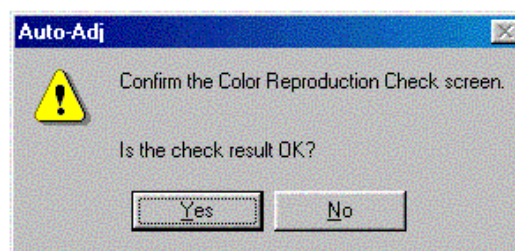


Fig. 6-1-41

- 5) Upon successful completion of “3. Color Reproduction Adj. & Check”, the following message is displayed. Change the chart in accordance with the message.

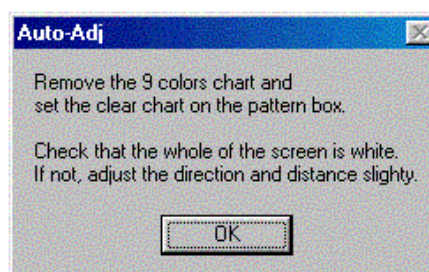


Fig. 6-1-42

- 6) Click the **[OK]** button, and the items from “4. CCD Linearity Check” to “7. Release of Data Setting during Camera Adj.” will be executed.
- 7) Upon successful completion of all items of the CAMERA Adjustment 4, the following message is displayed. Click the **[OK]** button.

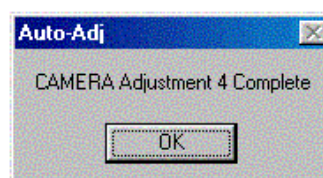


Fig. 6-1-43

9. CAMERA Adjustment 5

Note: “CAMERA Adjustment 5” is available only once after the power is turned on. If the adjustment is retried, turn off the power and turn on again.

[Automatic Adjustment Program execution items and sequence]

1. Data Setting during Camera Adj.
2. Strobe Adj.
3. Release of Data Setting during Camera Adj.

[Adjusting method]

- 1) Click the **[Start]** button of CAMERA Adjustment 5.
- 2) The Automatic Adjustment Program executes the “1. Data Setting during Camera Adj.”.
- 3) Upon successful completion of the “1. Data Setting during Camera Adj.”, the following message is displayed. Set the subject in accordance with the message.
(For the Flash adjustment box, refer to “3. Preparing the Flash Adjustment Box” (see page 6-8).)

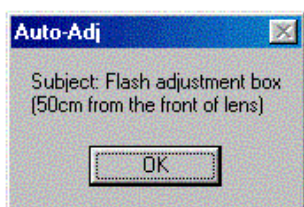


Fig. 6-1-44

- 4) Press the **[OK]** button, and the “2. Strobe Adj.” will be executed.
- 5) During execution of “2. Strobe Adj.”, the following message is displayed. After checking the flashing of strobe light, click the **[OK]** button. (This message is displayed 2 times during execution of adjustment.)

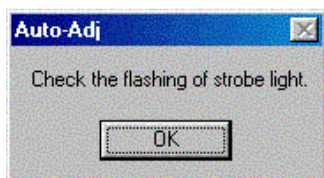


Fig. 6-1-45

- 6) Upon successful completion of “2. Strobe Adj.”, “3. Release of Data Setting during CAMERA Adj.” is executed.
- 7) Upon successful completion of all items of the CAMERA Adjustment 5, the following message is displayed. Click the **[OK]** button.

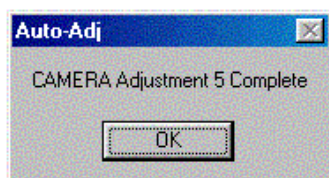


Fig. 6-1-46

10. CAMERA Adjustment 6

[Automatic Adjustment Program execution items and sequence]

1. Data Setting during Camera Adj.
2. Auto Focus Illumination Check
3. Release of Data Setting during Camera Adj.

[Adjusting method]

- 1) Click the **[Start]** button of CAMERA Adjustment 6.
- 2) The Automatic Adjustment Program executes the “1. Data Setting during Camera Adj.”.
- 3) Upon successful completion of the “1. Data Setting during Camera Adj.”, the following message is displayed. Set the subject in accordance with the message.
(For the Flash adjustment box, refer to “3. Preparing the Flash Adjustment Box” (see page 6-8).)

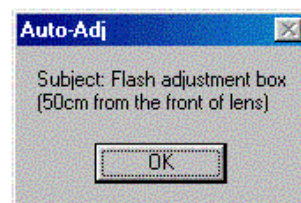


Fig. 6-1-47

- 4) Press the **[OK]** button, and the “2. Auto Focus Illumination check” will be executed.
- 5) Upon successful completion of the “2. Auto Focus Illumination Check”, the “3. Release of Data Setting during Camera Adj.” will be executed successively.
- 6) Upon successful completion of all items of the CAMERA Adjustment 6, the following message is displayed. Click the **[OK]** button.

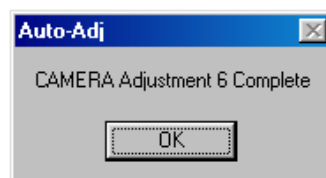


Fig. 6-1-48

11. CAMERA Adjustment 7

Perform this adjustment only when replacing the angular velocity sensor. When the microprocessor, circuit etc. is damaged, don't perform this adjustment but check the operations only.

Note down the sensitivity displayed on the angular velocity sensor of the repair parts. At this time, note down also to which board it was attached to.
Be sure to check because if attached incorrectly, the screen will vibrate up and down or left and right during the steady shot operations.

Precautions on the Parts Replacement

The PITCH sensor and the YAW sensor are different parts.

Precautions on Angular Velocity Sensor

The sensor incorporates a precision oscillator. Handle it with care as if it dropped, the balance of oscillator will be disrupted and operations will not be performed properly.

Adjustment Page	CF
Adjustment Address	0C, 0D

Note 1: The sensor sensitivity of SE501 and SE502 of the SY-150 board is written only repair parts.

Preparation:

- 1) Read the PITCH sensor (SY-150 board SE501) sensitivity written on repair parts, and named this as S₅₀₁.
- 2) Read the YAW sensor (SY-150 board SE502) sensitivity written on repair parts, and named this as S₅₀₂.

SY-150 BOARD (SIDE A)

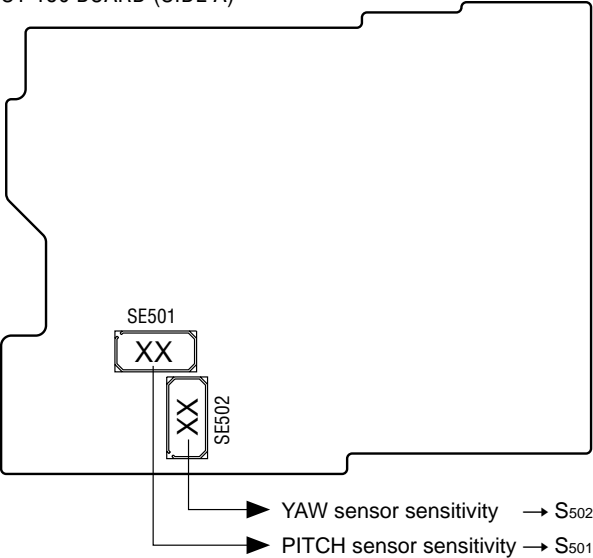


Fig. 6-1-49

[Adjusting method]

- 1) Click the [Start] button of Camera Adjustment 7, and the following screen will appear.

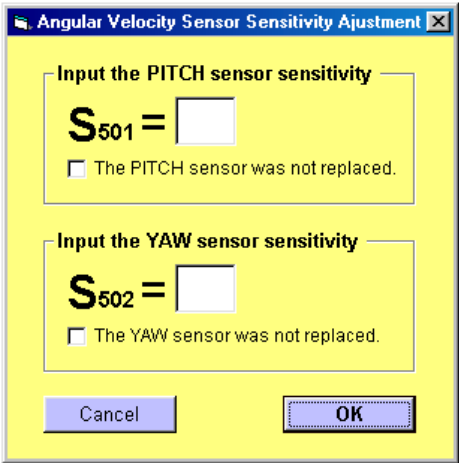


Fig. 6-1-50

- 2) Input the sensitivity of respective sensors (S₅₀₁, S₅₀₂) read at "Preparation" into the screen.
If only either sensor was replaced, give a check to the checkbox for the sensor not replaced at the lower left of the screen.
- 3) Click the [OK] button, and the adjustment data is then calculated from the sensor sensitivity value and the calculation result is written to the memory in the camera.
- 4) Upon successful completion of the data writing, the following screen will appear. Check that the steady shot function operates normally.

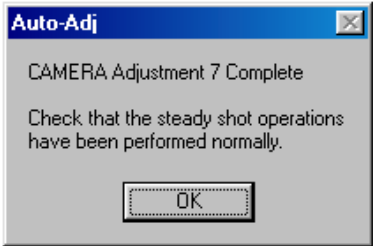


Fig. 6-1-51

1-5. LCD SYSTEM ADJUSTMENTS

1-5-1. Function of Each Button on LCD System Adjustment Screen

Click the **LCD SYSTEM ADJUSTMENT** button on the Main Menu screen, and the “LCD SYSTEM ADJUSTMENT” screen in Fig. 6-1-52 will appear.

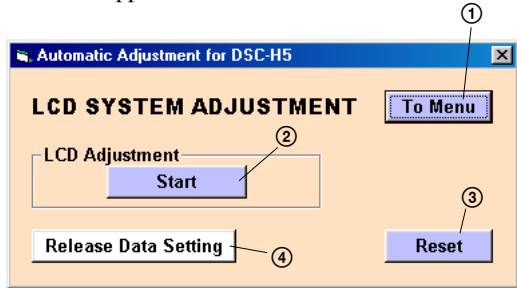


Fig. 6-1-52

- ① **To Menu** button
The Main Menu screen comes back.
- ② **Start** button
“LCD Adjustment” starts.
- ③ **Reset** button
This button functions same as the “Initialize” of the setup screen.
- ④ **Release Data Setting** button
The data setting at the adjustment is cancelled.
During the data setting, the button color changes from “white” to “red”. When the data setting is cancelled, the button color returns to “white”.
(Use this button when an error occurred in the LCD adjustment. If the adjustment completed successfully, the data setting is automatically cancelled and the button color returns to “white”.)

1-5-2. Adjustment Items of LCD System Adjustment

The adjustment items of LCD system adjustment are as listed in Table 6-1-4. The Automatic Adjustment Program executes the adjustment items if the LCD Adjustment Start button is clicked.

Button Name	Adjustment	Signal	Page	Address
LCD Adjustment	V-COM adj.	Arbitrary	8F	11
	White Balance adj.		8F	42, 43, 58, 59

Table 6-1-4

1-5-3. Adjusting Method

[Automatic Adjustment Program execution items and sequence]

1. Data Setting during LCD Adj. & EVR Data Write
2. V-COM Adj.
3. White Balance Adj.
4. Release of Data Setting during LCD Adj.

[Adjusting method]

- 1) Click the **[Start]** button of the LCD Adjustment.
- 2) The Automatic Adjustment Program executes “1. Data Setting during LCD Adj. & EVR Data Write”.
- 3) Upon successful completion of the “1. Data Setting during LCD Adj. & EVR Data Write”, the following message is displayed during execution in “2. V-COM Adj.”. On the SEUS screen, operate the UP/DOWN key so that the brightness of portions A and B on the LCD panel is equal. After the adjustment, click the **[OK]** button.

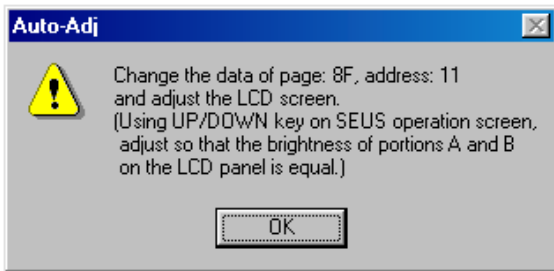


Fig. 6-1-53

- 4) Upon completion of “2. V-COM Adj.”, the following screen is displayed during the execution of “3. White Balance Adj.”. Check that the LCD screen is not colored. If colored, using the **[Up]** / **[Down]** button on the screen, adjust so that the LCD screen is not colored. After the adjustment, click the **[End]** button in the screen.

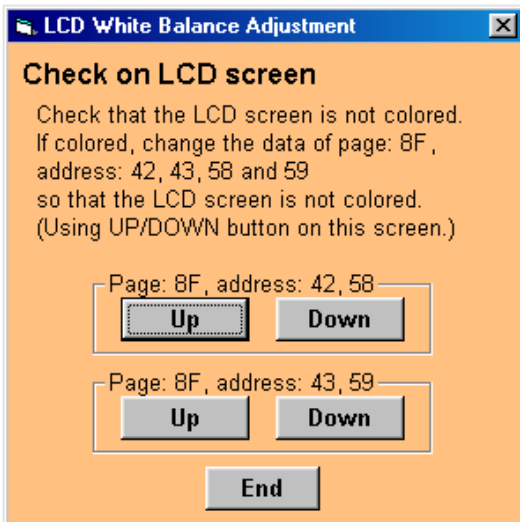


Fig. 6-1-54

- 6) Upon successful completion of all item the LCD Adjustment, the following message is displayed. Click the **[OK]** button.



Fig. 6-1-55

SEUS operation screen

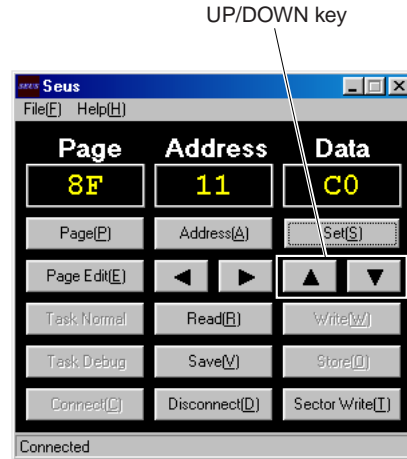


Fig. 6-1-56

Check on the LCD screen (V-COM Adj.)

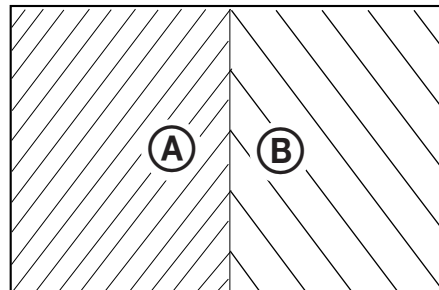


Fig. 6-1-57

- 5) If the **[End]** button is clicked, “4. Release of Data Setting during LCD Adj.” will be executed.

1-6. ERROR

In case of an error during the execution of adjustment, the Automatic Adjustment Program interrupts the processing at that point, and displays an error message, and then terminates the program execution there.

1-6-1. Error Message

When an error message is displayed, perform the remedy given below, and then retry adjustment. If the error message is displayed though the remedy was performed, the circuits will be faulty.

1. Connect Error

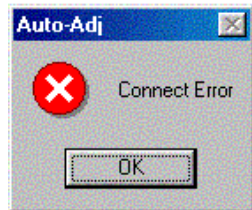


Fig. 6-1-58

Symptom	USB communication with the set is abnormal.
Cause	<ul style="list-style-type: none"> • USB cable is not inserted tightly. • Power supply is not installed correctly. • Communication with SEUS is abnormal.
Remedy	<ul style="list-style-type: none"> • Disconnect the USB cable once, and then re-connect it tightly and check that the set is in "USB Mode". • Install the power supply correctly. • Start the SEUS and click the Connect to check that the connection state is established.

2. RESET the CAMERA and Try Again

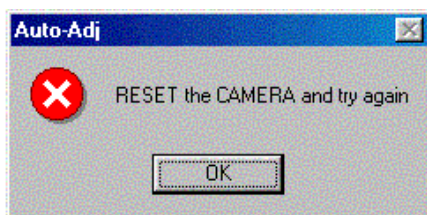
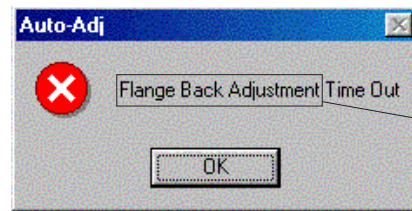


Fig. 6-1-59

Symptom	The camera is not ready for adjustment.
Cause	<ul style="list-style-type: none"> • Data error exists in the camera.
Remedy	<ul style="list-style-type: none"> • Reset the camera.

3. Adjustment Time Out

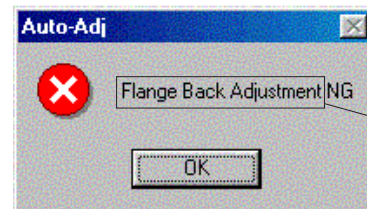


This part indicates the adjustment item in which an error occurred.

Fig. 6-1-60

Symptom	Adjustment does not finish within the specified time.
Cause	<ul style="list-style-type: none"> • Adjustment conditions are wrong. • Data error exists in the camera.
Remedy	<ul style="list-style-type: none"> • Check that the conditions such as a subject are correct. • Reset the camera.

4. Adjustment NG



This part indicates the adjustment item in which an error occurred.

Fig. 6-1-61

Symptom	The adjusted data does not become the specified value.
Cause	<ul style="list-style-type: none"> • Adjustment conditions are wrong. • Data error exists in the camera.
Remedy	<ul style="list-style-type: none"> • Check that the conditions such as a subject are correct. • Reset the camera.

5. Data Save Error

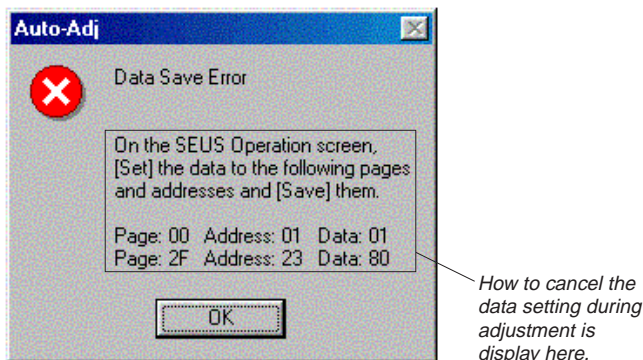


Fig. 6-1-62

Symptom	data cannot be saved normally. (The data setting during adjustment cannot be cancelled)
Cause	<ul style="list-style-type: none"> • Data writing to the flash memory failed. • Connection is faulty. • Power supply is not installed correctly.
Remedy	<ul style="list-style-type: none"> • On the SEUS Operation screen, [Set] the data to the pages and addresses displayed in the message, and [Save] them. (Cancel manually the data setting during adjustment.) • Check the connection. • Install the power supply correctly.

1-6-2. Precautions When an Error Occurred

The Automatic Adjustment Program sets the data for adjustment before the adjustment starts. Accordingly, if the adjustment terminates by an error, the data during the adjustment may be left in the camera.

Note 1: With this data left in the camera, the camera will not operate normally.

In this case, the **[Release Data Setting]** button is displayed in “red” on the screen as shown in Fig. 6-1-63, 64 and 65. Click the **[Release Data Setting]** button to cancel the data setting. When the data setting is cancelled, the button color becomes “white”.

Note 2: When “Data Save Error” occurred, the **[Release Data Setting]** button is displayed in “white”.

To cancel the data setting, perform it on the SEUS Operation screen. How to cancel the data setting is displayed in the error message.

Video System Adjustment screen

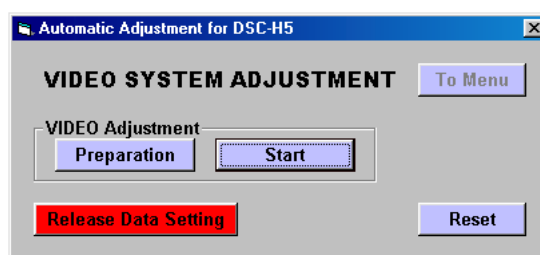


Fig. 6-1-63

Camera System Adjustment screen

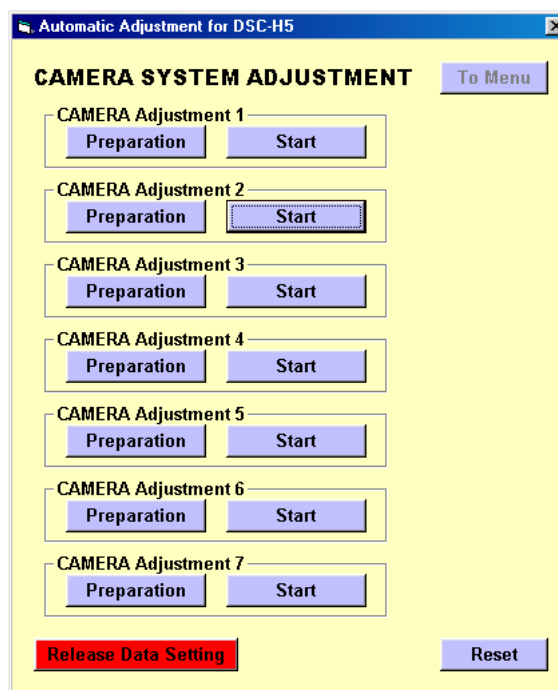


Fig. 6-1-64

LCD System Adjustment screen

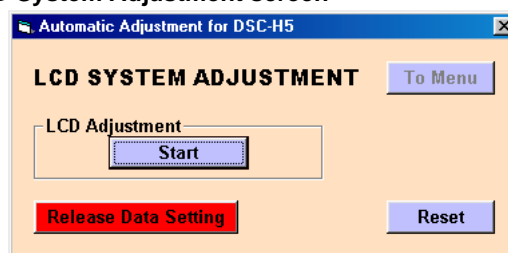


Fig. 6-1-65

1-7. INITIALIZATION OF DATA

1. Initializing All Page Data

By performing the following procedure, data of all pages will be initialized.

Note: If all page data have been initialized, all adjustments need to be performed again.

Initializing Method:

- 1) Select page: 00, address: 01 and set data: 01.
- 2) Click **[Sector Write]** on the SEUS screen to display the SEUS SECTOR WRITE screen.
- 3) Check that the SET ID is "07".
- 4) Click **[All]** of the ALL SELECT buttons to select all pages. (Fig. 6-1-66 (A))
- 5) Click **[Write]** to write the initializing data to the flash memory of the camera.
- 6) Wait for 3 sec.
- 7) Click **[Close]** to close the SEUS SECTOR WRITE screen.
- 8) Select page: 40, address: 38 and set data: 00.
- 9) Click **[Save]** on the SEUS screen.
- 10) Select page: 80, address: 34, and check that the data is "00".
- 11) Select page: 80, address: 30, and check that the data is "00".
- 12) Perform "VIDEO OUT Default Data Check" and "Initial Language Data Check".

Processing after Completing Initializing

Order	Page	Address	Data	Procedure
1	40	28	01 [Set]	(Note)

Note: At this time, the camera is reset and the power is turns off once and then on again. Accordingly, the SEUS goes in "disconnect" state, but this is not a trouble. Click **[Connect]** on the SEUS screen to restore the "connected" state. (In case that the power does not turn on again, press the power button.)

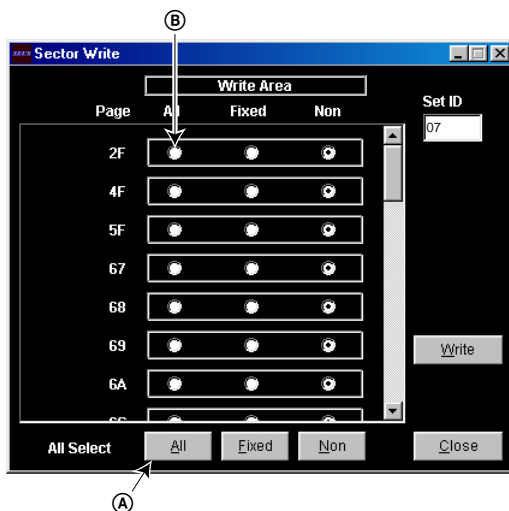


Fig. 6-1-66

2. Initializing Single Page Data

By performing the following procedure, data of the page that you want to initialize will be initialized.

Note 1: If the 6D or 6E or 6F or 78 or 79 or CE or CF page data have been initialized, the following adjustment needs to be performed again.

- 1) Camera system adjustments

Note 2: If the 8F page data have been initialized, the following adjustment needs to be performed again.

- 1) Video system adjustments
- 2) LCD system adjustments

Initializing Method:

- 1) Select page: 00, address: 01 and set data: 01.
- 2) Click **[Sector Write]** on the SEUS screen to display the SEUS SECTOR WRITE screen.
- 3) Check that the SET ID is "07".
- 4) Click "All" of the option buttons of target page. (Fig. 6-1-66 (B))
- 5) Click **[Write]** to write the initializing data to the flash memory of the camera.
- 6) Wait for 3 sec.
- 7) Click **[Close]** to close the SEUS SECTOR WRITE screen.
- 8) Select page: 40, address: 38 and set data: 00.
- 9) Click **[Save]** on the SEUS screen.
- 10) Select page: 80, address: 34, and check that the data is "00".
- 11) Select page: 80, address: 30, and check that the data is "00".
- 12) When 4F page is initialized, perform "VIDEO OUT Default Data Check" and "Initial Language Data Check".

Processing after Completing Initializing

Order	Page	Address	Data	Procedure
1	40	28	01 [Set]	(Note)

Note: At this time, the camera is reset and the power is turns off once and then on again. Accordingly, the SEUS goes in "disconnect" state, but this is not a trouble. Click **[Connect]** on the SEUS screen to restore the "connected" state. (In case that the power does not turn on again, press the power button.)

6-2. SERVICE MODE

1. Setting the Test Mode

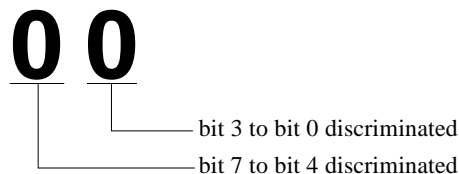
Page 40	Address A1, A3
---------	----------------

- Forced CAMERA (Auto) mode
 - 1) Select page: 40, address: A1, and set data: 01.
 - 2) Select page: 40, address: A3, and set data: 01.
- Forced CAMERA (Program Auto) mode
 - 1) Select page: 40, address: A1, and set data: 01.
 - 2) Select page: 40, address: A3, and set data: 02.
- Forced MOVIE mode
 - 1) Select page: 40, address: A1, and set data: 01.
 - 2) Select page: 40, address: A3, and set data: 07.
- Forced PLAY mode
 - 1) Select page: 40, address: A1, and set data: 01.
 - 2) Select page: 40, address: A3, and set data: 08.
- After completing adjustments/repairs, release the data setting.
 - 1) Select page: 40, address: A1, and set data: 00.

2. Bit Value Discrimination

In the following items, the bit values must be discriminated from the data displayed on the SEUS. Whether bit values are “1” or “0” can be discriminated from the table shown below.

Data displayed on SEUS



Display on the SEUS	Bit values			
	bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
Ⓐ 8	1	0	0	0
9	1	0	0	1
A	1	0	1	0
B	1	0	1	1
C	1	1	0	0
D	1	1	0	1
Ⓑ E	1	1	1	0
F	1	1	1	1

Example: If the displayed data is “8E”, bit 7 - bit 4 values can be discriminated from block (A), and also bit 3 - bit 0 values from block (B).

3. LED Check

Page 80	Address 12
Page 8E	Address FE

Using method:

- 1) Select page: 00, address: 01, and set data: 01.
- 2) Select page: 40, address: 98, and check that the data is "00".
- 3) Select page: 8E, address: FE, and set data: 20.
- 4) Select page: 80, address: 12, and set data: 01.
- 5) Check that all LED are lit.
 - SELF TIMER/AF ILLUMINATOR
 - FLASH CHARGE
 - MS ACCESS
- 6) Select page: 80, address: 12, and set data: 02.
- 7) Select page: 80, address: 12, and set data: 00.
- 8) Select page: 8E, address: FE, and set data: 00.
- 9) Select page: 00, address: 01, and set data: 00.

4. Switch Check (1)

Page 80	Address 13
---------	------------

Function	When data = 00	When data = 01	When data = 02
Shutter button (XAE LOCK SW) (CONTROL SWITCH BLOCK (S103))	OFF	ON	ON
Shutter button (XSHUTTER SW) (CONTROL SWITCH BLOCK (S103))	OFF	OFF	ON

Using method:

- 1) Select page: 80, address: 13.
- 2) By discriminating the read data, the state of the switches can be discriminated.

5. Switch Check (2)

Page 61	Address 90
---------	------------

Function	When data = 00	When data = 01
Steady shot button (CONTROL SWITCH BLOCK (S107))	OFF	ON

Using method:

- 1) Set the mode dial to "P (Program auto)".
- 2) Select page: 61, address: 90.
- 3) By discriminating the read data, the state of the switches can be discriminated.

6. Switch Check (3)

Page 20	Address 64
---------	------------

Function	When data = 01	When data = 11
Lens cap switch (AF-105 board S001)	ON (Lens cap attached)	OFF

Using method:

- 1) Select page: 20, address: 64.
- 2) By discriminating the read data, the state of the switches can be discriminated.

7. Switch Check (4)

Page 80	Address 15
---------	------------

Function	Data
Jog dial (When rotated in the left direction) (CONTROL SWITCH BLOCK (S105))	01
Jog dial (When rotated in the right direction) (CONTROL SWITCH BLOCK (S105))	02
Jog dial (When press the jog dial) (CONTROL SWITCH BLOCK (S105))	03

Using method:

- 1) Select page: 80, address: 15.
- 2) By discriminating the read data, the state of the jog dial can be discriminated.

8. Switch Check (5)

Page 40	Address 5F
---------	------------

Function	When data = 00	When data = 01
PLAY button (CONTROL SWITCH BLOCK (S108))	OFF	ON

Using method:

- 1) Set the mode dial to "P (Program auto)".
- 2) Select page: 40, address: 5F.
- 3) By discriminating the read data, the state of the switches can be discriminated.

9. Switch Check (6)

Page 20	Addresses A0 to A2
---------	--------------------

Using method:

- 1) Select page: 20, addresses: A0 to A2.
- 2) By discriminating the read data, the pressed key can be discriminated.

Address	Data						
	00 to 18	19 to 3D	3E to 5C	5D to 78	79 to AC	AD to E4	E5 to FF
A0 (KEY AD0) (IC101 K23)	CONTROL DOWN (SW-471 board) (S403)	CONTROL RIGHT (SW-471 board) (S401)	CONTROL UP (SW-471 board) (S404)	CONTROL LEFT (SW-471 board) (S406)	CONTROL SET (SW-471 board) (S405)	IMAGE SIZE/DELETE (SW-471 board) (S402)	No key input
A1 (KEY AD1) (IC101 L23)	ZOOM W (fast) (SW-471 board) (S409)	ZOOM W (slow) (SW-471 board) (S409)	ZOOM T (fast) (SW-471 board) (S407)	ZOOM T (slow) (SW-471 board) (S407)	MENU (SW-471 board) (S410)	SCREEN DISPLAY (SW-471 board) (S408)	No key input
A2 (KEY AD2) (IC101 G25)	FINDER/LCD (Control switch block) (S106)		FOCUS (Control switch block) (S101)		BRK (Control switch block) (S102)	JOG DIAL (press) (Control switch block) (S105)	No key input

10. Mode Dial Check

Page 20	Addresses A3, A4
---------	------------------

Using method:

- 1) Select page: 20, addresses: A3 and A4.
- 2) By discriminating the read data, the state of the mode dial can be discriminated.

Address	Data							
	00 to 12	13 to 38	39 to 5D	5E to 81	82 to A5	A6 to C9	CA to ED	EE to FF
A3 (MODE DIAL0) (IC101 L22)	A (Aperture) (Control switch block)	S (Shutter speed) (Control switch block)	P (Program Auto) (Control switch block)	AUTO (Control switch block)	MOVIE (Control switch block)	Portrait (Control switch block)	Landscape (Control switch block)	Others
A4 (MODE DIAL1) (IC101 L25)	M (manual) (Control switch block)	High sensitivity (Control switch block)	Twilight (Control switch block)	Twilight portrait (Control switch block)	Beach (Control switch block)	High-speed shutter (Control switch block)		Others

11. Self Diagnosis Code

Display Code	Countermeasure	Cause	Caution Display During Error
C:32:□□	Turn the power off and on again.	Trouble with hardware.	SYSTEM ERROR
C:13:□□	Format the “Memory Stick” or internal memory.	“Memory Stick” or internal memory is unformatted.	FORMAT ERROR
	Insert a new “Memory Stick”.	“Memory Stick” is broken.	MEMORY STICK ERROR
	Turn the power off and on again.	Trouble with internal mamory.	INTERNAL MEMORY ERROR
E:61:□□	Checking of lens drive circuit.	When failed in the focus zoom initialization.	—
E:62:□□	Inspect angular velocity sensor peripheral circuits.	Steady shot function does not work well.	
E:91:□□	Checking of flash unit or replacement of flash unit. (Note)	Abnormality when flash is being charged.	
E:92:□□	Insert a batteries correctly.	Batteries are pack is not inserted correctly.	

Note: After repair, be sure to execute the “Initialize” of the setup screen.

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2006.04	Official Release	—	—